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Developing a Market for Electric Ventilating Units

Contractor-Dealers Will Find It Easy and Profitable to Make Installations in Public Eating Places—Touching Upon Subject of Industrial Ventilation — Installations in Furniture Plant

By WILLIAM B. EASTWOOD

In the Sept. 24 issue of this publication there appeared the first article on electrical ventilation, in which G. C. Breidert, of the Ilg Electric Ventilating Co., Chicago, outlined some of the sales possibilities for ventilating fans in residences, business offices and retail stores. In an early issue, probably in the issue of Nov. 26, there will appear an article on the sale of ventilators in industrial plants by James H. Carbone, of the L. J. Wing Manufacturing Co., New York City. Other articles on ventilation by other authors will follow.—EDITOR'S NOTE.

When the electrical contractor comes to the canvass of restaurants, cafes, lunch rooms, coffee shops and like places of business he will find any number of installations of ventilators, but in nearly every instance the installations are in the kitchens—seldom situated so they will exhaust the foul air and odors from the rooms in which the public is entertained.

There is ample opportunity for the installation of ventilators in the public rooms of such places when the contractor or his salesman points out the fact that no public dining room can be kept sanitary and inviting without the exhaustion of odors and vitiated air and the introduction of clean, wholesome air. The agitation of the air in such places by ceiling or bracket fans is, of course, necessary in the heat of summer, but the venti-

This Johnson Installation in a Cafe Not Only Eliminates the Odor and Vitiated Air But Enhances the Decorative Scheme of the Interior.

Installation of Johnson Exhaust Fan in Oven Room of Bakery.

This place would be insufferably hot and unsanitary without the electric exhaust fan above the oven. At the left of the oven door may be seen the dial of a pyrometer which indicates the oven heat. At the time this view was photographed the dial indicated 300 deg. F.

lating fan or blower is a necessity all the year round. The odor of cooked foods, no matter how appetizing to the general run of patrons, becomes depressing and a detriment to the appetite when the atmosphere of the room becomes too heavily charged with it. In other words, the proprietor or manager of such places should be convinced that the cleaner and fresher the air is in his dining room, the greater the number of patrons that will be attracted and the more food will each purchase.

If the contractor has taste and something of the eye of an artist he can install an electric ventilating fan in a cafe or restaurant so that, in addition to elimination of odor and vitiated air, the installation blends with and even enhances the decorative scheme of the interior. This may be seen in the accompanying illustration of a Johnson Fan & Blower Co. (Chicago) installation in a cafe.

Factory Ventilation Vital to Safety, Economy and Efficient Production.

The subject of industrial ventilation is too broad and serious to be covered in a single article and, at the invitation of Electrical Review, several experts in ventilating engineering have promised to contribute some helpful thoughts on this phase of the subject for the interest of the electrical contractor-dealer. On the subject of factory ventilation, J. S. Eagen, of the Autovent Fan & Blower Co., Chicago, says:

"There is no phase of ventilation which is of such general importance as industrial plant ventilation. It is the subject of direct legislation and is given serious consideration by every employer in the land. Every known means is resorted to for the protection and safety of employes, among which ventilation is taking one of the most important parts.

"Aside from the rigid laws which require the ventilation of factories, it is to the advantage of every employer to provide an adequate supply of fresh air as it increases efficiency and speeds up production. This is a well known fact, substantiated by thousands of employers. The general health and well-being of its workers is the greatest asset that any business possesses. A good ventilating system is the most valuable as well as the most economical form of investment to which any plant can subscribe.

"Aside from the provision of fresh air for breathing purposes, fans and blowers prove of inestimable value in many processes of manufacture, among which are cooling, drying and carrying away noxious fumes and vapors. There are thousands of such applications, among which may be enumerated the drying of leather, macaroni, pottery, etc.; cooling meat, etc.; removing dust, fumes and gases. We have made all of these conditions the subject of careful and concentrated study and will take pleasure in giving the benefit of our experience and research as applicable to the individual conditions existing in any plant.

"We have made a specialized study of this subject from every possible standpoint. There is no field, perhaps, which requires so much consideration of the individual conditions; there are no two identical. If a contractor has a problem of this kind, our engineers will, without obligation on his part, be pleased to prepare a suitable layout to meet the existing conditions, with recommendations as to the proper equipment to be used."

Large Furniture Factory Adopts Electric Ventilation With Profit.

What Mr. Eagen says in regard to the assistance which his company is prepared to render contractor-dealers in ventilating problems holds equally true with other manufacturers of ventilating equipment. Therefore, no contractor need hesitate to tackle any job of ventilation through lack of experience. He can submit his problem to the manufacturer and promptly obtain a diagram and specific details for the installation.

One of the illustrations herewith shows a portion of the enameling room in the big furniture factory of Heywood Bro. & Wakefield Co., Chicago, the noxious fumes and intense heat from

Even This Barber Shop Is More Sanitary and Inviting to Customers With Its Johnson Installation.

which are eliminated by the 36-in. "Autovent" exhaust fan installed in the wall above the lacquer vats. The baking ovens shown at the right of the picture are operated at a temperature of approximately 140 deg. F. and, prior to the installation of the ventilating unit, it was impossible for the workmen to remain in this particular department for any length of time.

The ventilating unit in the enameling department of the big furniture factory is only one of many such installations in other departments of the same plant. There are hundreds of such applications for exhaust fans as practically every manufacturing plant employs processes which create unfavorable atmospheric conditions that may be very readily corrected at a surprisingly low cost by the installation of a fan or blower to meet the particular requirements.

"After a very comprehensive survey of the industrial field," says Mr. Eagen, "we have found that plant owners and superintendents consider the installation of a fan or blower an investment that actually pays a high rate of return in increased efficiency, which naturally means a lower production cost."

Necessity for Electric Ventilators in Oven Room of Bakeries.

In the previous article on ventilation in the Sept. 24 issue of Electrical Review one of the illustrations showed the installation of an Ilg ventilating fan in an electric bakery. If a bakery of that nature requires a ventilating fan—and it admittedly does—how much more necessary is a ventilator in the oven room of one of the less modern bakeries where wood or coal is used for fuel and where the heat and conditions of sanitation are a much more serious problem.

One of the smaller illustrations with this article shows the installation of a blower, made by the Johnson Fan & Blower Co., in the oven room of a bakery. As the view indicates, this is one of the older type of bakery ovens. This place would be insufferably hot and unsanitary without the electric blower above the oven. At the left of the oven door in this view may be distinguished the dial of a pyrometer for indicating the heat in the oven. At the time this view was photographed the dial registered 300 deg. F. Yet the bakers find no more inconvenience in working in this room since the installation of the ventilator than they would in the open air.

Garages Without Ventilation Are Actual Menace to Life of Occupants.

Wherever there is a barber shop there should be a customer for a ventilating unit. Herewith is presented the view of a Johnson electric ventilator in a barber shop. As every man who patronizes one of these shops knows, the atmosphere of the barber shop is highly impregnated with fumes from the various preparations used by the artist of the razor, from the dampened hair, from the blacking or polishing of shoes, and in addition there is the steam from the hot water and the dust which the porter whisks from the coat of the patron.

It should be easy to convince the proprietor of such a shop that the installation of a ventilating fan not only exhausts all the objectionable odors and dust, but makes the shop more inviting to a greater number of customers because of the purer

Installation of 36-in. "Autovent" Exhaust Fan in Enameling Room of Heywood Bro. & Wakefield Co. Furniture Factory, Chicago—One of Many Such Installations in This Mammoth Plant.

atmosphere. The shop mentioned above did not pay before this installation.

All too frequently one sees chronicled in the daily press the death of a person whose body is found on the floor of his garage, the result of asphyxiation by the fumes of burned gasolene. No private garage should be without a ventilating fan for the purpose of avoiding the possibility of asphyxiation or illness resulting from burned gas fumes when the owner or his chauffeur finds it necessary to warm up his engine on a cold morning or for other reasons.

Gas fumes and the odor from oil in public garages are frequently so overpowering that many people who patronize them dread to enter to leave or obtain their car. Every public garage should be equipped with a ventilating fan for each four or five cars capacity. Not only would this be more inviting to patrons, but it would actually insure the health and comfort of the employes.

At one of the oiling stations of a large express company in Chicago, where one attendant is obliged to oil and fill the tanks of from 20 to 40 motor trucks daily, it is said to be almost impossible to keep an attendant more than 2 or 3 mo. at a stretch because of the effect of the fumes upon the lungs of the average person. The installation of a ventilating fan in that place would not only give comfort and efficiency to the attendant but he would not be obliged to leave in a short space of time with impaired health.

"BROADER CO-OPERATION NEEDED," SAYS HOFRICHTER.

Secretary of National Council of Lighting Fixture Manufacturers Makes Interesting Suggestion for Coming Convention in Milwaukee.

That "no man lives for himself alone" is a truism. The great wave of co-operation which has swept over the lighting fixture industry during the past few years is a proof that we are realizing more and more that "we are our brother's keeper," and accepting this responsibility makes for more comfortable conditions for everybody concerned.

"But," says Charles H. Hofrichter, secretary of the National Council of Lighting Fixture Manufacturers, "we have still some way to travel along the road to co-operation. The lighting industry has made wonderful progress, it is true. Only a few years ago the formation of such organizations as we have now would have been considered unlikely in the extreme. And yet, I feel that there is still much to be done towards the fostering of greater co-ordination and fraternal feeling between organizations themselves.

"Problems of the electrical industry are becoming so vast that they can only be properly solved by such a plan of co-ordination, and by a mutual recognition between the different organizations of their common problems and of the inter-relation of each one with the others. For instance, organizations, like individuals, are more or less selfish. We come together in our trade conventions and our own industry problems seem so great and so magnified that there is a tendency to shut out the consideration of related problems. There is in fact too much organization 'clannishness.'

"In view, therefore, of the necessity for broader co-ordination I am asking the Executive Committee of the National Council of Lighting Fixture Manufacturers to blaze the trail by allowing at least one session of the coming convention, which is to be held during the week of the Lighting Fixture Market at Milwaukee, Jan. 30-Feb. 4, to be set aside for this purpose of giving expression to our fraternal feeling towards other organizations. Should it prove impossible owing to pressure of business to devote an entire session to this important matter, it is the idea to reserve one of the noonday get-together luncheons for the purpose. A number of other electrical organizations will be invited to send representatives to express their friendly greetings and their good will

Charles H. Hofrichter,
Secretary, National Council of Lighting Fixture Manufacturers.

—or otherwise—towards us. Such things always 'clear the air.' To talk a thing over is the surest way to find out that there are always two sides to a question—both perhaps partly, but neither wholly correct—and to reach a permanent working arrangement. Each organization will be able to learn through its representatives the purposes for which the other organizations exist and the principles which give them their identity.

"Co-ordination of effort," concludes Mr. Hofrichter emphatically, "can only come about through a full appreciation of the problems which are both mutual and individual in trade organizations."

The Board of Public Utility Commissioners has denied the application of the New Jersey & Pennsylvania Traction Co., Trenton, N. J., for a merger with its subsidiary lines, including the Trenton, Lawrenceville & Princeton Railroad Co., the Lawrenceville & Princeton Extension Railway Co. and the Princeton Street Railway Co. The refusal is made on the ground that securities outstanding would be in excess of any proven value of the corporation.

Considering Woman's Viewpoint in Sale of Appliances

Successful Salesmanship to the Housewife Involves Study and Presentation of Facts in Terms With Which She Is Familiar—Each Woman Presents Different Problem for Contractor-Dealer

By KATHRYN MADDOCK

"What do I want when I buy an electric cleaner?" said the housekeeper. "A clean house, of course. Now, for my part, I never felt that my house was really clean as long as I had only dustpans and brooms and mops to rely on."

Mrs. Chandler was one of the tribe of "careful housekeepers" who seem to be born with an abhorrence of dust. Time was when they were continually armed with apron and dustpan and lived uneasy lives in pursuit of real or imaginary dirt about the home. The lady of the Dutch cleanser advertisement is typical of them—the home-bodies who are never so happy as when cleaning. One of them once said to me, "I just love to sweep."

This is the kind of housewife who dotes on cleaning out her husband's desk—to his utter despair. She loves to stack his papers in neat piles and dust them all carefully, with the result that for days he cannot locate any of his precious notes when he goes to look for them. Little boys with muddy feet are obliged to stand at the door and wipe and wipe before they are allowed to enter, and anyone who "tracks across" a clean kitchen floor is declared guilty of a household crime. Sometimes she carries this zeal to excess, to the discomfort of everyone concerned, but when she doesn't let her love for cleanliness run away with her she is likely to be a truly successful home maker. She is, in fact, the "pure type" of housekeeper and, therefore, the electric cleaner makes instant appeal to her housewifely soul. It is a tool which will increase her efficiency. When it is demonstrated to her simply, in terms of its use in the home, without reference to fan revolutions and motor bearings and air velocities which

Home Setting Should Be Ideal When the Salesman Would Successfully Impress the Housewife with Essential Necessity of Appliances.

only confuse her, she has no difficulty in seeing its possibilities.

"I was dumbfounded," said Mrs. Chandler, "when the salesman ran that cleaner over my living room rug and took out more than a pound of dirt. To think of that in *my* home, when I have had the reputation of being almost the best housekeeper in town! That rug has been swept and beaten thoroughly and regularly—but as I said, I never was really satisfied with the results of my efforts until after I had the electric cleaner to use on it."

Selling to Women Requires Study of Their Varying Characteristics.

Not all women take such delight in their home duties as the Mrs. Chandlers, but most housekeepers are at least affected with varying milder degrees of the same spirit. And it is universally true that they respond readily to the demonstration which consists of more than just sales jargon.

The cleaner salesman who keeps a weather eye open for the human characteristics of his customers soon learns to distinguish the zealous housekeeper who delights in cleaning for the sake of cleaning, and also to recognize the many other types with whom he has to deal, and to adapt his attitude accordingly. He studies the human factor in the sale as thoroughly as he does the appliance. If he is shrewd, he picks and chooses his incidental sales argument in each case with reference to the traits of the customer.

With my friend, Mrs. Chandler, for instance, the smart salesman would not indulge in much chatter about the "hours of leisure" which a cleaner would bring her. She is not particularly interested in "hours of leisure." She is of the active type and will always be busy and happy doing things for her home.

There is a large class of women, however, whose chief interests are in club and social life, and with them he emphasizes the thought that this labor-saver will give them spare time for such activities outside the home. Usually, this group of women is also especially susceptible to what the "ready-to-wear clothing" people call the "snob" appeal. In their world this means the suggestion that the clothes and hats they buy are worn by the "exclusive" set. The Nebraska farmers receive elaborate circulars showing haughty New York clubmen arrayed in mail order suits, and they are accordingly much impressed. Most women, similarly, may be influenced by a hint that anyone who does not keep house electrically is behind in the procession. It's *the* thing to do.

Developing Sales Argument from Chance Remarks of Customers.

Mrs. Wright is a housewife of another interesting type. She is a progressive woman, quite a reader and very wide-awake, but at the same time she is a thoroughly motherly sort. Her family always comes first, and she is always full of plans for their comfort and well-being. When she was shopping for her electric cleaner, so she told me, she had her little boy with her and she happened to make some remark about his health. The salesman immediately picked this up and went on to explain the value of the cleaner in eliminating dangerous disease germs from the home.

"There are about 1500 dust particles per cubic inch in the purest sea air," he said, "and in large cities a single cubic inch often contains more than 1,500,000 particles. On each tiny particle may be found one or more bacteria, a large proportion

Studying the Human Factor in Sale of Electrical Appliances.

The successful salesman keeps his eye on the customer. He picks and chooses his incidental sales arguments with reference to her personality.

of them disease germs. This dust, settling in the home, is a real menace unless it is removed regularly and thoroughly."

The progressive, motherly type of housewife may always be interested by the presentation of facts relating to the health of her family. To the woman who looks as though she is not very strong physically, the suggestion that the cleaner will save her from fatigue and perhaps from illness is always welcome.

Convincing the Woman Customer With Language She Understands.

When it comes to closing a sale with a woman who must consider her expenditures carefully, particularly the middle aged housekeeper, or the housekeeper who has had business experience, it is worth while to point out the fact that the money paid for the cleaner is not spent, but is an investment which brings rich dividends in comfort, convenience and health.

All these special points of appeal which have been enumerated are merely incidental, as was stated, to the main argument, the one which alone interested Mrs. Chandler—the proof that the cleaner could clean. Still, these little touches, because they are so particularly apropos in each case, are often worth more than labored talk about mechanisms and cleaning technique.

The salesman often unintentionally mystifies the housewife by telling her strange things about how the brush acts upon the carpet to loosen the dirt, making it ready for the action of compli-

cated air currents which travel in and out and all about. He creates a great deal of hocus-pocus in her mind about water column tests and volume and velocity, with the result that she becomes a little bewildered and at once makes up her mind to see another salesman and learn some more about this black magic. In the end she makes work for three or four salesmen where one should be enough.

Any salesman who will take a different tack and approach his customer in terms of her home and her interests, "sizing up" the prospect and putting in just sufficient mechanical description to satisfy her, but not enough to confuse her, will find her immediately responsive. It is then a simple proposition of buying an implement for the cleaning of the home, and the choice the housewife is called upon to make is a reasonable one. Ability to think of the cleaner in terms of the housekeeper's language is invaluable to the salesman who likes to use up lots of contract forms in a year.

OHM'S LAW IN ITS APPLICATION TO MERCHANDISING.

Charles Henry Mackintosh, President, Associated Advertising Clubs of the World, Talks to Electrical Contractors and Dealers.

At a recent contractor-dealer conference of the National Retail Congress in Chicago, one of the chief speakers was Charles Henry Mackintosh, president of the Associated Advertising Clubs of the World. The subject of Mr. Mackintosh's address was "Ohm's Law Applied to Merchandising." The following excerpts from the address were prepared by Charles L. Benjamin, advertising expert, and printed in a recent issue of "Beardslee Talks," house organ of the Beardslee Chandelier Manufacturing Co., Chicago:

Ohm's law states that electrical pressure, measured in volts, divided by resistance, measured in ohms, equals flow of current, measured in amperes. We may apply this same law to the merchandising of any article by defining volts as the amount of sales-pressure exerted by the salesman, ohms as the amount of sales-resistance inherent in the customer (reluctance to part with his money), and amperes as the volume of sales. It is clear, then, that in order to increase the volume of sales we must either increase the sales-pressure or reduce the sales-resistance. In other words, the reluctance of the customer to buy must be overcome by the desire of the salesman to sell.

Every actual sale is preceded by a mental sale. The sale really takes place in the customer's mind, and the exchange of money for merchandise is merely the final act in a train of events that collectively constitute what we call the "sale." The mind, therefore, is the thing we must work on. But how? That word IDEA which I have used in connection with the phrase "buying idea" gives us the clue to what must be done.

I—stands for INTEREST
D—stands for DESIRE
E—stands for ENTHUSIASM
A—stands for ACTION

These are the four steps that lead up to and result in a sale. First we must get the buyer's *interest* in the merchandise offered. This may be accomplished by advertising, by show window displays, or in any of the many ways in which a person's attention is attracted to an article of merchandise. Next we must create *desire* to possess the article, for interest without desire does not result in action.

When a customer comes into your store to inquire about a particular article the first two steps toward the sale have, as a rule, already been taken. He (or she) is interested and desire, to some extent, has been created. Now is the salesman's opportunity to instill *enthusiasm,* which is the third step in selling. Enthusiasm is desire raised to the n-th degree. A woman who is merely mildly interested in an electric washing machine or vacuum cleaner, may be enthused by a demonstration if the salesman, by his comments while the demonstration is in progress, keeps constantly before her the idea of self-interest—pointing out how the possession of the particular labor-saving device under consideration will lighten her household duties.

In every sale the customer mentally weighs a certain sum of money (the purchase price) against a certain service and then weighs the value of this service against some other service that an equal sum of money will buy.

Desire generally outruns income, and when you are talking to a woman about a washing machine she may be saying to herself that for the same sum of money she could buy a talking machine she has long wanted, and is imagining how well it would look in a corner of the living room and what fun they could have fox-trotting to its music. You have got to get her enthusiastic over the washing machine to dispel this conflicting impulse, or her money will go into the cash register of the talking machine dealer instead of into your cash register.

Interest, desire and enthusiasm lead to *action.* This is the final step in the sale. Little by little, as the sales-pressure of the salesman has increased, the sales-resistance of the customer has diminished, until at last there comes that joyful moment when the customer says: "I'll take it," and the sale is made!

Voltage divided by resistance equals amperes. Sales-pressure divided by sales-resistance equals volume of sales. Just at present the ohmic resistance of customers is higher than usual, but this does not mean that sales cannot be made. It does mean, however, that the low-voltage sales methods of past years will no longer do. The stores have the merchandise, the people have the money, and all that is needed to get the merchandise moving to the people and the money to the stores is more high-voltage salesmen.

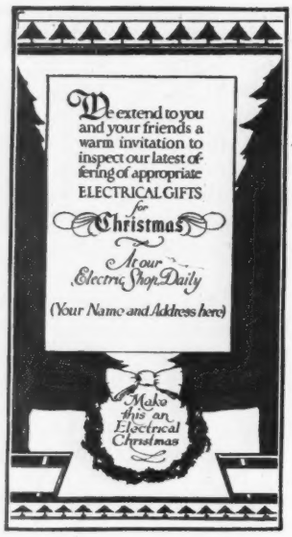
DEVELOPMENT SOCIETY ANNOUNCES CHRISTMAS CAMPAIGN.

Plans and Selling Helps for Contractor-Dealers Being Sent Out to Assist in Building Up Greater Holiday Electrical Trade.

With the mailing to the trade of a folder describing the plans and selling helps, the Society for Electrical Development has launched its seventh annual campaign to help the electrical

industry promote the buying of electrical Christmas gifts. As an introduction to the plans, the first page of the announcement carries to all electrical people a greeting and a few inspirational comments from W. L. Goodwin.

The three major selling helps offered by the Society this year are: (1) An elaborate set of window display cut-outs, (2) set of store and window display cards including one large card


We extend to you and your friends a warm invitation to inspect our latest offering of appropriate
ELECTRICAL GIFTS
for
Christmas
At our Electric Shop Daily
(Your Name and Address here)
Make this an Electrical Christmas

Gift Suggestion Folder Produced by S. E. D. as One of Its Christmas Campaign Selling Helps.

with eight smaller price or suggestion cards, (3) beautiful 8-page folder including an invitation to visit the dealer's store, together with many illustrated gift suggestions. This is designed to be mailed to prospective customers, to be inclosed with letters or distributed at the store.

The keynote of the campaign is expressed by the slogan, "Bring Back Business by Getting Busy Selling." Merchants are urged to get their selling activities into full swing as early as possible on the theory that people are learning to "Shop Early" and the electrical merchant must, therefore, be ready to sell early.

It has been the experience of the Society that each of its Christmas campaigns has shown an increase in material ordered by dealers over the preceding year's drive. All signs indicate that this year will follow the rule. Campaign helps are available both to members of the Society and to those who are not members, although members will of course enjoy a considerable price advantage.

Folders descriptive of the campaign will be mailed to all electrical people interested. Write to the Society for Electrical Development, Inc., Executive Offices, 522 Fifth avenue, New York City.

The New York Telephone Co. has established a new record for telephone system construction with the installation of 17,080 mi. of new lines in Greater New York during the week ending Sept. 3.

DENVER'S ADVERTISING CAMPAIGN STARTS NEXT MONTH.

Electrical Co-Operative League of Denver Expects Big Things From This Movement Which Is Now Getting Under Way.

So much has been said of late of the value of co-operative advertising that the electrical interests of Denver, always firm believers in the movement, have crystallized their sentiments into action. Through the Electrical Co-operative League of that city a campaign is being launched early in November to run for 4 mo. Manufacturers, jobbers, the central station and the majority of the contractor-dealers are participating in the campaign which has been laid out to serve a double purpose, to emphasize the idea of "Make This an Electrical Christmas," and as a feeder to the special campaign advertising the exhibition of Denver's fully equipped electrical home which will be displayed shortly after the holidays.

Financing the campaign has not been difficult, according to A. C. Cornell, chairman of the League's publicity committee. A quota of $5000 was set up, divided into three groups—$1000 from the manufacturers and jobbers, $2000 from The Denver Gas & Electric Light Co., and $2000 from the contractor-dealers, which was underwritten by their local association through E. C. Headrick, the president.

Individual subscriptions in the first and last groups were based on the relative amount of gross business done between July 1, 1920, and June 30, 1921. In the case of the contractor-dealers, their individual quotas were based on 0.25 of 1% of the gross business done during the same period. Collection of funds for the first 30 days' operation was made in advance and no dealer, unless a paid-up member of the association, could participate in the co-operative advertising proper. Every encouragement has been given to insure as much tie-in copy as possible and the total is sufficient to warrant a complete electrical page in those issues of the newspapers, which is the only medium used in the campaign.

A local advertising agency is handling the campaign. The copy is being prepared in advance so that all contributors will be acquainted with the motif of each "ad" and proper tie-in copy can be prepared. The Co-operative League emblem featuring the caption "Do It Electrically" is being emphasized along with the slogan "Make This an Electrical Christmas."

Campaigns as conducted in other cities and data in the trade journals have been carefully analyzed in order that every advantage can be had in making the campaign a success.

PLANS TO REDUCE POWER RATES.

The Municipal Lighting Department of Logansport, Ind., has filed a petition with the Public Service Commission for authority to reduce its light and power rates. It is proposed to adopt a flat schedule of $0.07 per kw-hr., as against a present charge of $0.08, with steps at $0.075, $0.07 and $0.06 for lighting, and a rate from $0.06 to $0.0275 per kw-hr. for power as compared with $0.065 to $0.0275 as at the present time.

Installation of Elexit Requires No Special Fittings

Additional and Timely Information Given Contractor-Dealers Regarding Preparation for Installation of New Device Under Present Method of Wiring— Diagrams for Mounting Elexits

By BEN TOUSLEY
Electric Outlet Co., Inc., New York City.

Several months ago ELECTRICAL REVIEW published an article informing the industry that "Elexit" devices had been standardized and would be placed on the market by 11 competitive manufacturers, probably before the first of the year. The publication of this announcement has aroused a considerable degree of interest among the trade, particularly the contractors and dealers who desire to know just what effect elexits will have upon the present method of wiring an outlet and whether provision can be made in buildings that are now being constructed, or under consideration for early construction, to have these buildings modernly equipped with elexits when they are actually ready for occupancy.

The accompanying illustrations portraying the

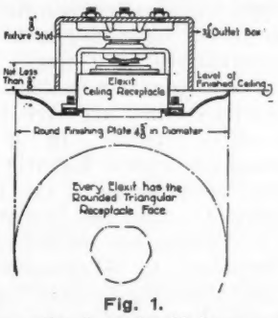

Fixture Stud
Outlet Box
Not Less Than ⅝
Elexit Ceiling Receptacle
Level of Finished Ceiling
Round Finishing Plate 4⅛ in Diameter
Every Elexit has the Rounded Triangular Receptacle Face

Fig. 1.

Every ceiling outlet box should have a ⅜-in. fixture stud and the end of the stud should be at least ⅝ in. above the finished ceiling level. Elexit receptacles can then be installed at any time.

installation of elexit receptacles in side wall and ceiling were prepared in order that the readers of ELECTRICAL REVIEW might visualize the simplicity with which the device is installed.

While the devices are not yet on the market, nevertheless they can be written into the specifications of such buildings as are now being planned or under construction. Elexit receptacles and plugs have been standardized to such a degree that they are interchangeable without regard to origin of manufacture and it is possible for an electrical contractor, by observing some simple requirements in the wiring of buildings, to install elexits either before or after the buildings are completed.

In Figs. 1 and 2, two ceiling conditions are shown, the chief difference being in the varying distances of the end of the stud from the finished plaster line. Side-wall conditions are indicated in Figs. 3, 4, and 5, and two distinct ways are shown of mounting an elexit receptacle in the wall, viz: on the stud in a box, and on the ears of a box. In Fig. 5 the comparative size of the two side-wall finishing plates is also shown, the narrower plate being used with specially narrow boxes or box covers.

It will be seen from these illustrations that the

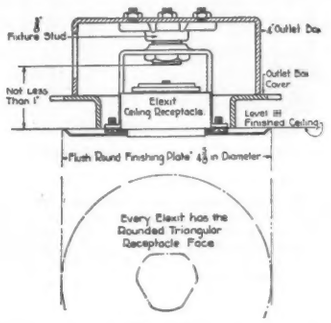

Fixture Stud
Outlet Box
Outlet Box Cover
Not Less Than ⅝
Elexit Ceiling Receptacle
Level of Finished Ceiling
Flush Round Finishing Plate 4⅛ in Diameter
Every Elexit has the Rounded Triangular Receptacle Face

Fig. 2.

If the ⅜-in. fixture stud is at least 1 in. above the finished ceiling level, Elexit receptacles may be installed flush, as illustrated above.

installation of elexits requires no special fittings and does not disturb the customary provisions for the attaching of lighting fixtures. By studying these diagrams and acting accordingly it is thoroughly practical for the contractor to make definitely certain that his client will have, with respect to lighting at least, a permanently modern building and all lighting and electrical equipment used in the building can be brought up to date with the utmost economy and convenience.

It has been estimated by well informed persons in the industry that elexits will increase the number of side-wall outlets three or fourfold. This is largely because elexits are designed not only as "places for lights" but as convenience outlets into which any appliance equipped with a standard attachment plug may be plugged. Fans, too, can be quickly mounted by plugging them into elexits if they are equipped with an elexit plug.

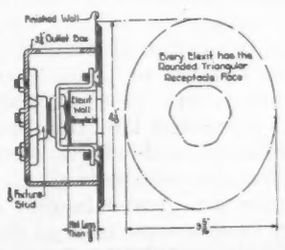


Fig. 3.

If wall outlet boxes have ⅜-in. fixture studs, the end of each stud must be at least ⅝ in. back of the finished wall. An Elexit receptacle can then be installed at any time.

With these vast possibilities opening to the electrical contractor and dealer many of the far-sighted ones, recognizing that the outlets of 1922

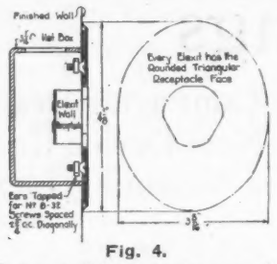


Fig. 4.

Wall outlet boxes and box covers are often tapped for two No. 8-32 screws, spaced 2¾ ins. apart, center to center, and arranged diagonally. Elexit receptacles may be installed by using these screw holes.

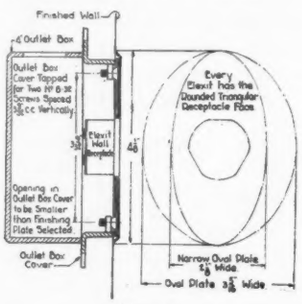

Finished Wall
Outlet Box
Outlet Box Cover Tapped for Two №8-32 Screws Spaced 3 9/32" cc Vertically
Every Elexit has the Rounded Triangular Receptacle Face
Elexit Wall Receptacle
3⅛"
4⅝"
Opening in Outlet Box Cover to be Smaller than Finishing Plate Selected
Outlet Box Cover
Narrow Oval Plate 2⅜" Wide
Oval Plate 3⅛" Wide

Fig. 5.

If wall outlet box covers are tapped for two No. 8-32 screws, spaced 3 9/32 ins. apart and arranged vertically, Elexit receptacles may be installed by using these screw holes. If the openings in such are sufficiently narrow the Elexit receptacles may be furnished with a narrow oval plate, as illustrated.

and the future will be elexits, are planning with elexits in mind and when building again becomes normal such contractors and dealers will reap greater profits as the reward of their farsightedness.

CHINA TO HAVE EXTENSIVE LONG DISTANCE TELEPHONES.

"With full realization that little progress will be made in the unification of their country until it adopts modern methods of internal communication, the business men of northern China have started agitation to link up all their principal cities by telephone toll lines," declared Clark H. Minor, former manager of the China Electric Co. of Peking, recently. Mr. Minor arrived in New York a short time ago on his way to London where he will become commercial manager of the associated and allied companies of the International Western Electric Co. in Europe. "Work has already begun on a long distance line between Shanghai and Peking that will connect with the toll system now in operation between the northern capital and Tientsin," he said. "The latter line, which has the distinction of being the only intercity cable now existent in China, is only 100 mi. long. The new artery of communication probably will be completed late this year. It will cost about $500,000 and will be constructed according to American standards.

"The Chinese are great admirers of the telephone. They have become tired of the difficulties which beset their use of the telegraph where the many characters of their alphabet force them to send all their messages in code, and want to enjoy the time-saving methods of approach, familiar to Americans. Consequently, new exchanges are being erected in most of the larger cities to augment the 55,000 subscriber lines already in use in the Celestial Republic. Girls are being trained for the 'hello' job in Shanghai for the first time. It is very probable also that the more talkative sex will be used in the operation of the new system in the Yangtse valley. Hitherto due to the cheapness of male labor all work at the Chinese exchanges has been done by men."

Mr. Minor believes that it will take about 10 yrs. to give China the kind of telephone service its more active citizens desire. Some of the less progressive reactionaries of the republic are inclined to make a more pessimistic estimate but their fears are offset by the enthusiastic optimism of the young men recently graduated from the technical colleges in the United States and Europe. The political unrest in China has had little effect upon its industrial progress. When Mr. Minor first went to China in 1918 there were about 1,000,000 cotton spindles in operation. Today, 3 yrs. later, 65 factories are running 1,750,000 spindles. "Labor in China is just as plentiful as ever; the supply is unlimited," he continued. "There has been a slight increase in wages due to higher costs of living, a condition which hinges directly on the price of rice, but on the whole the workers do far more for their hire than their brethren of most other countries. When I left native carpenters were getting a daily wage of about $4.25 in American money."

"The factional troubles between the Peking and Canton governments have had little effect upon foreign representatives in China," Mr. Minor concluded. "Aliens are responsible only to their respective legations; they are free to deal with both sections of the republic. In the 3 yrs. since its organization the China Electric Co., which really is a joint undertaking of the International Western Electric Co. and the Ministry of Communications at Peking, has raised its capitalization from $250,000 to $1,000,000, a growth fostered by the increasing demand for telephones and other electrical material in the republic."

MOTOR DRIVEN TOOLS TO BE PURCHASED FOR CHINA.

In line with the statements made at the International Chinese-American Conference at Detroit, as reported in ELECTRICAL REVIEW, pp. 595-596 of the issue of Oct. 15, 1921, it has been announced at Cincinnati that Chas. H. Kettenring, president of the Defiance Machine Works, Defiance, O., has been appointed industrial advisor to the Chinese Commission. Mr. Kettenring will be in charge of purchases of equipment for the machine and automotive industries, most of which will be electrically operated. His contract with the Chinese Republic extends over a period of 20 yrs. and it is stated that he expects to be in a position to give out requisitions by the first of the year.

The Chicago & Northwestern Railway Co. has returned to a prewar basis in purchasing supplies, President William H. Finley announced last week. The road has authorized the purchase of $2,000,000 worth of supplies monthly, Mr. Finley stated, the purchases covering practically all lines.

Motor-Control Equipment Used in Elevator Service—Part II.

Push Buttons Employed to Control Operation of Elevators in Connection With Full-Magnetic Equipments—Car Switch Control—Diagrams and Illustrations of Circuits and Control Devices

By G. J. KIRKGASSER and E. W. SEEGER

Full-Magnetic Controllers—Car-Switch Control.—The majority of passenger elevators and some freight machines are equipped with full-magnetic controllers with a master switch in the car for controlling the operation of the equipment. The simplest equipments have only one speed in each direction and are usually satisfactory where the car speed does not exceed 100 ft. per min. Above 100 ft. per min. and up to 200 ft. per min., two speed points are usually provided in connection with d-c. service. The second speed is a slow speed obtained by inserting the starting resistance and placing a shunt across the armature terminals. Above 200 ft. per min. additional speed points are obtained with direct current by inserting resistance in the shunt-field circuit. On a-c. service a 2-speed motor is used.

Fig. 132 is a diagram of the connections of a high-speed d-c. equipment, and Fig. 133 is a simplified or "across-the-line" diagram of the same controller. The master switch is provided with three speed points in each direction and is connected to line L_2 through the over-travel limit switches. On the first point in the "up" direction a circuit is completed from the finger, 2, on the master switch, through the final limit switches and the coils of the reversing contactors U_2 and U_1, field and brake relay FB and main contactor M. From the coil on contactor M the circuit continues through an interlocking contact on the accelerating relay AR to the overload relay contact OL, then through the overspeed governor, over-travel hoistway limit switches and car safety switch, to the line L_1. The contactors U_2, U_1, FB and M operate when this circuit is completed, and the motor starts with resistance R_1-R_6 in series with the armature and the resistance R_8-R_9 in parallel with the armature. The relay FB in closing energizes the shunt brake coil and

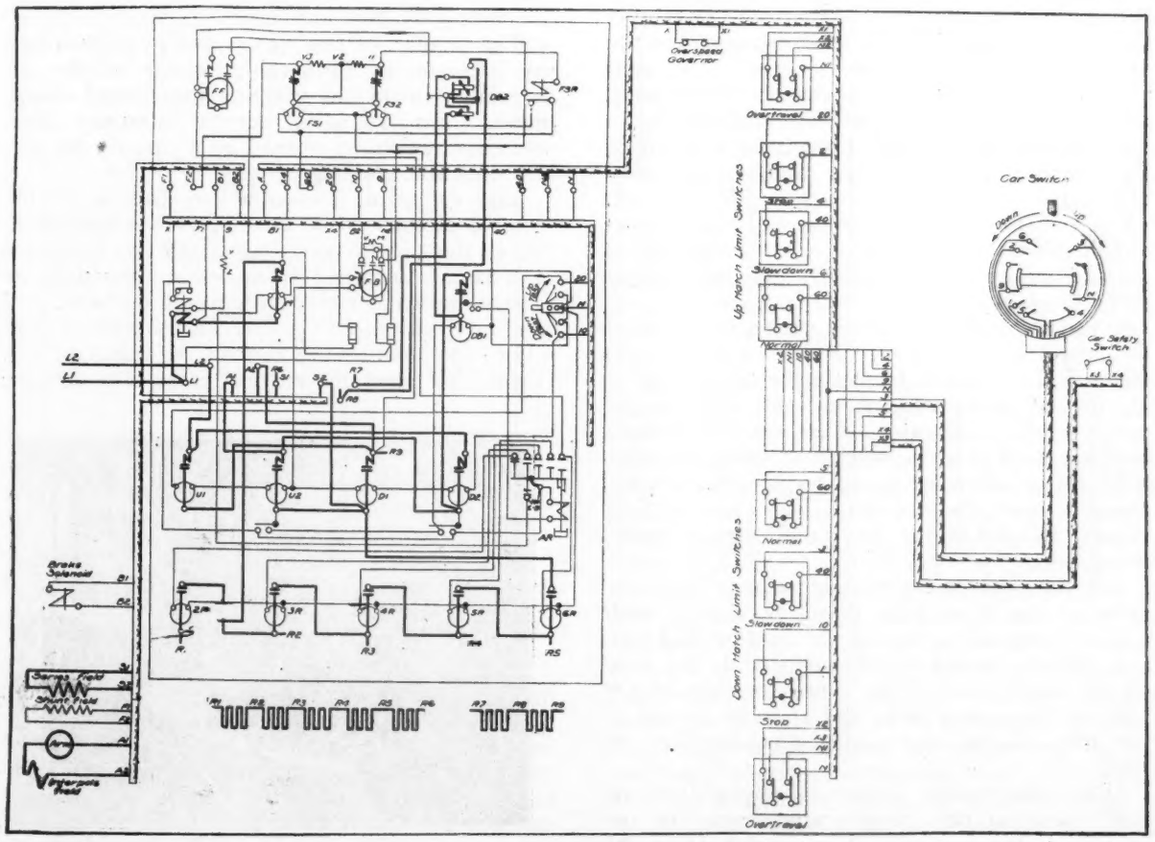


Fig. 132.
Wiring diagram of full-magnetic d-c. elevator controller for passenger service.

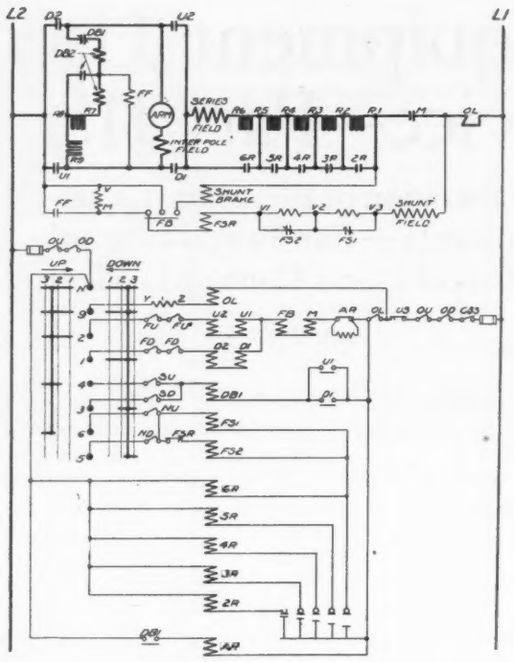


Fig. 133.

Elementary diagram of full-magnetic d-c. elevator controller for passenger service.

also applies full voltage to the motor shunt field. When the master switch is moved to the second-speed point a circuit is completed by the master finger, 4, through the "slow-down" limit switch *SU*, through the coil of the spring-closed contactor DB_1 and an interlocking contact on the reversing contactor U_1, to the overload contact. When the contactor DB_1 operates it interrupts the circuit in parallel with the armature, and the motor accordingly increases in speed. As soon as DB_1 operates the circuit to the accelerating relay *AR* is completed from *N* through interlocking contacts on DB_1, and through the coil *AR* to the overload contact. The accelerating relay causes the accelerating contactors *2R*, *3R*, *4R*, *5R* and *6R* to close in the proper order and short-circuit the resistance R_1-R_6. The oil dashpot on the accelerating relay is usually adjusted so that all of the contactors close in 2 or 3 sec.

When the master switch is placed in the third or high-speed position the spring-closed field contactor FS_1 is opened, inserting the resistance V_2-V_3 in the shunt-field circuit and causing the motor speed to increase. When the field current has decreased to a predetermined value the relay *FSR* closes, allowing the contactor FS_2 to operate and insert the resistance V_1-V_2 in the field circuit, and the motor then accelerates to maximum speed.

Assuming an elevator having a maximum car speed of 400 ft. per min., driven by a motor with a speed range of two to one obtained by field control, the car would operate at 400 ft. per min. on the third point of the controller, 200 ft. per min. on the second point and from 60 to 100 ft. per min. on the first point, depending on the load.

When the master switch is returned to the "off" position the various contactors are de-energized, the motor is disconnected from the line, the brake is set and the spring-closed contactor DB_1 conects the resistance R_7-R_9 across the armature terminals for obtaining dynamic braking. A strong field for braking is obtained by means of the relay *FF* which short-circuits the resistance *V-M* during the braking period. Graduated dynamic braking is obtained by means of the lockout contactor DB_2 which is held open by the high initial current, but closes and short-circuits the resistance R_6-R_7 when the dynamic braking current falls to a predetermined value.

Fig. 134 shows an elevator machine driven by a 2-speed a-c. motor. The controller is equipped with two sets of reversing contactors, one set for each of the two primary windings, and three accelerating contactors for short-circuiting the secondary resistance.

Full-Magnetic Controllers — Push-Button Control. — Push-button-operated equipments are used for both passenger and dumbwaiter service. For passenger service a "call" button is usually placed at each landing, and a complete set of buttons consisting of one button for each floor and an emergency stop button is placed in the car. The arrangement of push buttons on a dumbwaiter equipment depends upon the service. In some cases a complete set of buttons is placed at each landing, so that it is possible to send the car from one landing to any other landing. In other cases only two buttons are placed at each landing, a "call" and a "send" button, and the car is returned to a main station after each trip. Other equipments have only one button at each landing for calling the dumbwaiter, and a complete set of buttons inside the car for dispatching it to any desired landing. With the latter arrangement the operator presses the proper button to select the landing and then starts the car by closing the hoistway door.

The number of landings served by a push-button elevator or dumbwaiter is one of the determining factors in selecting the control equipment. For 2-landing service hoistway limit switches, which are opened by a cam on the car, are used for stopping.

Fig. 135 is an across-the-line diagram of the control circuits of a 2-landing d-c. equipment. When the "down" push button DB_1 is depressed a circuit is obtained from line L_1 through the various safety devices, through the contactor coil *FS*, limit switch *FD*, and contactor coils D_2 and D_1 to the interlocking contact on contactor U_1. From this point the current passes through the

Fig. 134.

Installation of Haughton elevator machine showing 2-speed a-c. motor and Cutler-Hammer control panel.

push button DB_1, stop buttons SU and SD and through the other safety devices to line L_2. When the contactors FS, D_1 and D_2 close the motor is started with resistance in circuit. Interlocking contacts on the contactor D_1 short-circuit the push button DB_1 which may be released as soon as the contactors close. The interlocking contacts on contactor D_1 also energize the coil of the accelerating device AR, which gradually short-circuits the starting resistance and causes the motor to accelerate to full speed. When the lower landing is reached the limit switch FD is opened and the equipment stops. The car may also be stopped at any intermediate point by operation of the stop buttons.

Hoistway switches are also used to some extent for 3-landing equipments, and have in some instances been used for more than three landings. The preferred practice, however, is to use some type of floor-selector device for three or more landings.

Fig. 136 shows a d-c. 8-landing dumbwaiter installation. In addition to the magnetic contactors for starting, stopping, reversing, accelerating and braking the control panel contains eight relays, one for each landing, which operate in connection with the floor selector on the extreme right and insure that the car will slow down and stop at the preselected landing.

Fig. 137 is a simplified diagram of an a-c. 4-landing elevator controller using another type of floor selector. This floor selector consists of one latched-in relay for each landing, two wheels, W_1 and W_2, which are geared to the elevator machine, and two selector ribbons, UR and DR, held together by the insulating block A. The position of the insulating block A corresponds to the postion of the car in the hoistway, and Fig. 137 shows the position of the block when the car is at the third landing. If, now, the button $4B$ is depressed the relay $4R$ will be energized

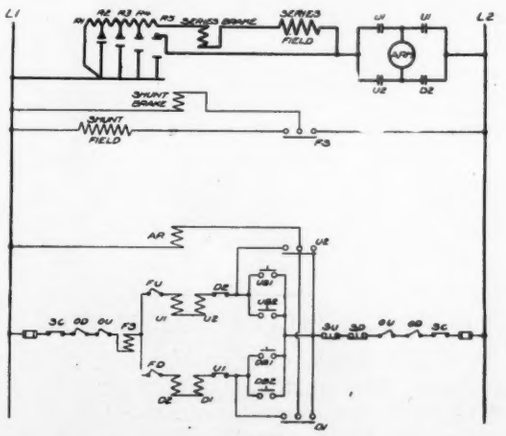


Fig. 135.

Elementary diagram of 2-landing push-button-operated elevator controller.

and the finger of this relay will make contact with the ribbon UR and cause the "UP" contactor to be closed. This in turn completes the circuit for the "MAIN" contactor, and the equipment starts and runs until the fourth landing is reached. At this point the insulating block stops the equipment by pushing the finger of relay $4R$ back into engagement with its latch.

An emergency stop button EB is provided for

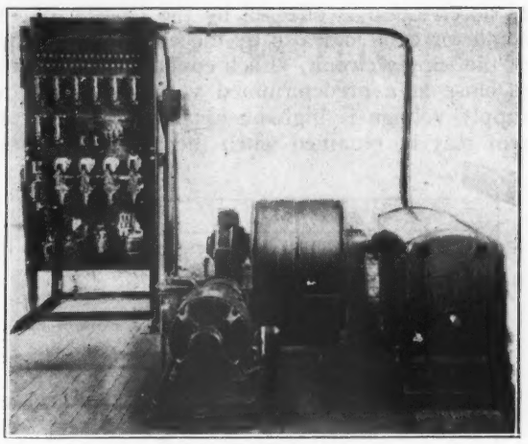


Fig. 136.

Installation of 8-landing dumbwaiter equipment showing floor-selector device and controller.

stopping the car in emergencies. When the emergency solenoid ES is energized it pulls the bar B forward and breaks the circuit of any relay finger which happens to be in contact with the selector ribbon.

The interlocking resistance HK is used to prevent the operation of two relays at one time by pressing two buttons simultaneously. The timing relay TR prevents operation of the equipment for a definite time after the car stops, thus insuring that the person operating the car will have time to open the doors before someone else "steals" the equipment by pressing another landing button.

Combined Car-Switch and Push-Button Control.—Elevators are sometimes installed which are extremely busy during certain hours, but operate only infrequently during other periods. In these cases combined car-switch and push-button control is sometimes provided, the car being operated by an attendant during the busy hours and by push buttons when the traffic is light. A transfer switch is necessary with equipments of this type for changing from car-switch to push-button operation. On some equipments the same push buttons operate the annunciator during car-switch operation and the selector relays during the period of push-button operation.

Elevator Acceleration.—Two of the essential requirements for satisfactory passenger elevator service are smooth starting and acceleration, and various methods of control have been found to give satisfactory service. The three methods of acceleration commonly employed are current-limit, counter-voltage and time-limit. Current-limit acceleration is probably the least satisfactory of the three for elevator service because of the number of interlocking contacts which are required. With either current-limit or counter-voltage acceleration it is necessary to allow a high enough starting current to insure starting under maximum load. With light loads the starting torque is, therefore, excessive and the car may start with an unpleasant jerk. This effect may be eliminated by using a motor with a "slow" field (usually obtained by using solid field poles), but the acceleration is usually slower with a motor of this type.

When counter-voltage control is used the rate

of acceleration is effected by the heating of the contactor coils and also by the voltage variations of the supply circuit. Each contactor is adjusted to close at a predetermined voltage, and if the supply voltage is high an abnormally high current may be obtained when the last accelerating

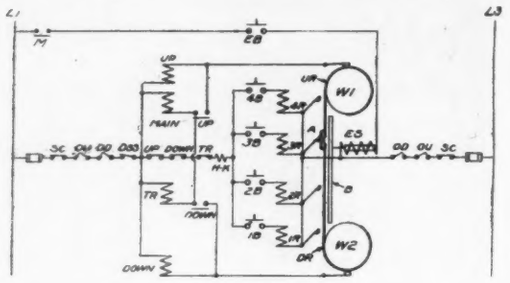


Fig. 137.

Elementary diagram of 4-landing push-button-operated elevator controller.

contactor closes. This disadvantage may be overcome by using a large number of accelerating contactors. Counter-voltage acceleration is preferred by some manufacturers because of its simplicity and the fact that practically no interlocking contacts are required.

Time-limit acceleration has one decided advantage over the other types. The initial starting current may be limited to a very low value, and in this way smooth starts are obtained with light

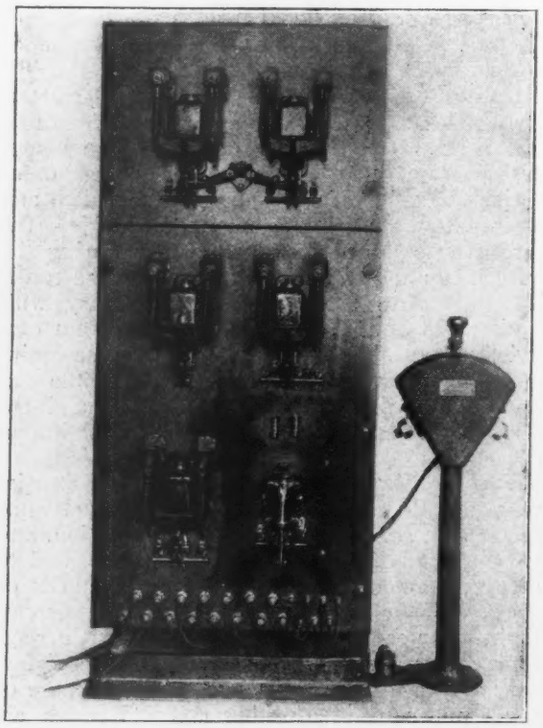


Fig. 138.

Full-magnetic a-c. elevator controller and master switch.

loads. With heavier loads the motor does not start until the first accelerating contactor has closed. Some trouble has been experienced with equipments of this type due to the fact that the timing varied with changes in temperature, but oil dashpots have recently been perfected which maintain a constant timing over a wide range of temperatures. Time-limit acceleration can be used with either a-c. or d-c. service, and as it requires but few electrical interlocks is preferred by the majority of elevator manufacturers.

EMPLOYES SUPPORT THEIR COMPANY BY STOCK PURCHASES.

An interesting table appeared in the October issue of the Pacific Power & Light Co. *Bulletin,* showing the manner in which employes of the company in the various districts are showing their belief in the future of the industry which provides them with their present means of support. The table is reproduced herewith. The following quotation is made from a brief article printed with the table:

"If those employes who have not yet made up their minds that *now* is the time to begin payments on a stock subscription, if only for one share, could hear the almost daily comments made by the ones who have paid on a subscription for a sufficient length of time to have experienced the satisfaction of seeing their monthly payments mount up toward the cost of each share for which they are paying they would, even at considerable sacrifice, take out a subscription without further delay. *The hardest part* of the fight to save *is the beginning.* When it comes to saving we have everything to gain and nothing to lose. Do it now—think it over when you have time. If each one of us were to save on this plan it would not be long until every one would be receiving dividend checks."

EMPLOYES SUBSCRIPTION RECORD BY DISTRICTS.

District.	Number of employes.	Number buying stock.	Percentage.
Kennewick	8	8	100
Pomeroy	3	3	100
White Salmon	3	3	100
Sunnyside	7	6	85
Dayton	7	6	85
Prosser	9	7	78
Seaside	4	3	75
Lewiston	9	6	67
Pasco	11	6	54
Toppenish	9	4	41
The Dalles	19	8	42
Walla Walla	38	16	42
Goldendale	5	2	40
Naches Power Plant	28	11	39
Astoria	47	16	34
Pendleton	10	2	20
Vancouver	5	1	20
Hood River	10	2	20
Yakima	63	12	19
Total	295	122	41

PUBLIC UTILITY VALUATION.

E. V. Kykendall, director of public works of the state of Washington, is advocating the teaching of public utility valuation, rate-making and other utility service fundamentals in the public schools in connection with civics. He says, "manifestations of prejudice and misunderstanding are largely attributable to lack of information." The *Morning Oregonian,* commenting editorially on his plan, says: "Public schools are already so loaded with subjects of study that the *Oregonian* hesitates to suggest a new one. But regulation has become so important a function of government that it should be included as part of a course of civics; in fact, a young man or woman is not well informed unless they have studied this subject."

Dealers Participate in a Window Trimming Contest

Electrical Shops Display Taste and Versatility in Arranging Exhibits of Household Labor Saving Appliances in Competitive Effort for Honors Awarded by One of the Large Manufacturers

Recently a large number of electrical contractor-dealers in every part of the United States and Canada participated in a window-trimming contest inaugurated by Landers, Frary & Clark, appliance manufacturers of New Britain, Conn. The displays of the participants consisted chiefly of smaller household labor saving appliances manufactured by the New Britain company, and so much taste and initiative were shown by so many dealers that the judges found it somewhat difficult to make the awards.

While only five awards were made, every person who participated profited by the effort through increased sales resulting from their exceptionally attractive window displays. The interest and enthusiasm thus aroused has achieved beneficial results which will in most cases carry the dealers through the season. Each dealer had the satisfaction of experiencing remunerative returns because of the interest they aroused in their stores and the consequent increase in patronage.

Illustrations of the five windows receiving the highest awards are presented herewith because of their special attractiveness. The first award was made to the Sterling Electric Co., Minneapolis, Minn. As in most of the displays prepared and photographed for the contest, the small appliances predominated. The spacing of the articles in this window gave each appliance an individuality which was easily distinguishable to the observer. The larger appliances were very appropriately grouped in the rear and to the left against the wall. The potted fern on the draped pedestal in the center lent decorative tone and additional color to the display.

The second award was made to the Electric Service Co., of Mankato, Minn., for an artistically trimmed window display in which each of the several appliances and lamps were emphasized on their individual dais or pedestal, except the ceiling lighting units suspended from above. This window presented as rich an appearance as any to be seen in front of a jewelry store.

The Ottawa Electric Co., Ottawa, Ont., Can., received the third award for a window display in which a decorative back panelling and a judicious use of show cards and display cutouts set off the small appliances to advantage. The de-

Window Display of Schroeder Electric Co., Albany, N. Y., Awarded Fifth Prize in the Landers, Frary & Clark Contest.

Window Display of Rudge & Guenzel Co., Lincoln, Nebr., Awarded Fourth Prize in the Landers, Frary & Clark Contest.

sign and dressing of this window was not expensive, yet it gave a rich and effective tone to the display. Absence of the crowding of a large assortment of appliances together was a feature worthy of emulation by many other dealers.

Rudge & Guenzel Co., Lincoln, Neb., received the fourth award. A view of this window may be seen at the top of the second page of this article. This halftone reproduction does not do the original photograph full justice, just as the photograph failed to reproduce the actual effectiveness of the window display as seen with the naked

First Award was Made for This Display of the Sterling Electric Co., Minneapolis, Minn., in Landers, Frary & Clark Contest.

Ottawa Electric Co., Ottawa, Ont., Can., Received Third Prize for This Window Display in the Landers, Frary & Clark Contest.

eye. In this display a very dark background was used—except for two sets of light window drapes—which brought into distinct relief the bright metal of the appliances. While there were not too many articles in the window, they might possibly have been more effectively arranged.

Fifth in the list of the judge's awards came the window display of Schroeder Electric Co., Albany, N. Y. The chief idea in this display, as may be seen in the view on the first page of this article, is the use of leading tape or ribbon running from various of the appliances in the front

Second Prize was Awarded Electric Service Co., Mankato, Minn., for This Display in the Landers, Frary & Clark Contest.

of the window to a cutout figure on a draped dais in the rear of the display. This exhibit could have been much improved by the elimination of some of the articles and a more systematic arrangement of those remaining. It compares favorably, however, with many of the best window displays seen in the electric stores of any city.

Those dealers who have rightly followed the practice of making their show windows their chief advertising feature in the immediate neighborhood, are striving every day to improve their attractiveness. It has been found good practice to rearrange the display at least once a week and to install a different background, with different trimming and new show cards once a month. The Cleveland plan of employing an expert window trimmer for a group of dealers has done wonders in improving the attractiveness of displays.

REVIEW OF BUILDING OPERATIONS IN SEPTEMBER.

F. W. Dodge Co.'s Report Shows September Construction Activity Breaks Records—Business Buildings Represent 17% of Total.

Building contracts awarded during September in the 27 northeastern states, according to the F. W. Dodge Co., amounted to $246,186,000. This is not only the largest monthly total that has been reached this year, but it is also the largest September figure on record. The September total shows an increase of 11.5% over the August figure; whereas, during the 10-yr. period previous to 1921, the average September figure is 14.5% less than the average August figure. Although the greatest increase in September was evident in the New York district, substantial increases are noted in the entire middle western territory, comprising the Pittsburgh and Chicago districts. New England, the northwestern states and the middle Atlantic states showed the usual seasonal decline in September.

Residential building still leads among the various classes of construction, amounting to $95,303,000 in September. This figure represents 39% of the total September construction. Of even greater significance at the present time is the increase in volume of business buildings. The September figure was $41,259,000, the largest monthly total on this class since June, 1920. Business buildings represented 17% of the September total. Construction was started on a number of long-deferred projects of this kind in September. Public works and utilities amounted to $35,414,000 in September, or 14% of the total; educational buildings amounted to $26,459,000, or 11% of the total. September's record of construction activity appears to indicate that a real revival is on the way.

In the New England states September building contracts amounted to $16,026,000, which is 22% less than the August figure. The normal seasonal decline in September is 17%. Included in the September total were the following items: $6,984,000, or 43%, for residential buildings; $2,840,000, or 17%, for business buildings; $1,394,000, or 9%, for industrial buildings; and $1,240,000, or 8%, for educational buildings. Total contracts awarded in New England from Jan. 1 to Oct. 1, 1921, have amounted to $131,828,000, which is 18% less than the average for the first 9 mo. of the preceding 5 yrs.

Contracts awarded during September in New York state and northern New Jersey amounted to $85,900,000. This is the largest total for this district for any single month on record. The previous maximum figure was $80,300,000, which was reached in the month of August, 1919. The September, 1921, total was 41% greater than the figure for the preceding month. Residential buildings amounted to $47,590,000, or 55% of the total. This is the largest figure for residential building in this district for any month on record. This total covers 1384 projects, 1291 of which amount to less than $100,000 each, 90 amount to from $100,000 to $1,000,000 each, and three amount to more than $1,000,000 each. These figures demonstrate the effectiveness of the Tax Exemption Act. Business buildings amounted to $17,590,000, or 20% of the total, this being the largest total for this class recorded in any month of this year in the New York district. The September total figure brings the total for the first 9 mo. of this year up to $446,608,000, which is 48% greater than the average for the first 9 mo. of the preceding 5 yrs. Contemplated new work was reported in this district during September to the amount of $73,255,000.

September building contracts in the middle Atlantic states (comprising southern New Jersey, eastern Pennsylvania, Delaware, Maryland, the District of Columbia, Virginia and North and South Carolina) amounted to $34,119,000, a decrease of 10% from the August figure. This is just the average seasonal decline for this district. The September total included the following items: $11,452,000, or 33%, for residential buildings; $7,873,000, or 23%, for public works and utilities; $4,036,000, or 12%, for business buildings; and $2,624,000, or 8%, for industrial buildings. The total amount of contracts awarded in this district during the first 9 mo. of this year have amounted to $258,388,000. If North and South Carolina activity (not included in previous years) be deducted, the net total is practically equal to the average in this district for the first 9 mo. of the preceding 5 yrs. Contemplated new work was reported in this district during September to the amount of $58,293,000, which is 14% greater than the amount of contemplated work reported in August.

September building contracts in western Pennsylvania, West Virginia, Ohio, Kentucky and Tennessee amounted to $40,885,000, an increase of 24% over the August figure. In previous years September has, on the average, shown a decrease of 11% from August. Included in the September total were: $10,268,000, or 25%, for residential buildings; $9,134,000, or 22%, for educational buildings; $8,576,000, or 21%, for public works and utilities; and $8,033,000, or 19%, for business buildings. From Jan. 1 to Oct. 1, 1921, total contracts awarded in this district have amounted to $331,078,000. If the figures for the states of Kentucky and Tennessee (not counted in previous years) are deducted from this total, the remainder is a figure considerably in excess of the average for the first 9 mo. of the preceding 5 yrs. In this district contemplated new work was reported in September to the amount of $44,006,000.

EDITORIAL COMMENT

Design Registration

Manufacturers of all kinds of electrical devices and materials are interested in the Design Registration Bill now before Congress. E. T. Caldwell, chairman of the Design Committee of the National Council of Lighting Fixture Manufacturers, has called attention of Secretary Hofrichter, of that organization, to the bill and Mr. Hofrichter has passed the information along to the members, all of whom are interested in any legislation that will make piracy of design an obnoxious practice. The bill will unquestionably check design piracy. It doesn't give any broader recognition to property rights in design than is given already under the Patent Law, but it gives, by registration at $1, what the Patent Law gives for $60 or thereabouts.

Because of the heavy expense involved in patenting a design, piracy has become a common custom and when design registration becomes general there will be an automatic cessation of the evil. It is worthy of note that Mr. Ewing, patent commissioner, and Mr. Solberg, copyright commissioner, both favor the bill as a workable proposition.

The Design Registration League is a get-together organization of business men to push this bill. It started in 1914. In 1916 the Bill H. R. 17290 (now known as H. R. 10028 of the 65th Congress) was introduced in the House of Representatives and referred to the Patent Committee, and after thorough investigation this committee endorsed the measure unanimously—the report of the chairman, Mr. Morrison, on Aug. 18, 1916, being an extraordinary brief recommending the bill from legal, business and equity standpoints. The bill was then introduced in the Senate and referred to the Committee on Patents in the spring of 1917, at just the time when we entered the war, and all legislative matters were immediately sidetracked.

The bill has been endorsed by the Merchants' Association, the Silk Association, the Trade Press Association (representing 30 or 40 trades), the Jewelers, Advertising Specialty, Automobile, Medicinal Products, Stationers, Lace and Embroidery, and innumerable other business associations that realize what a frightful overhead expense is involved in continually producing new designs to take the place of the things pirated. The bill is not retroactive.

Buyers and salesmen also wish this bill passed and support is heartily given to the measure by art schools and art societies, it being obvious that it is folly to attempt to stimulate art in industry if there is no respect shown for property rights in design.

The bill will soon be again presented in Congress and it would be well for those interested in its success to communicate with the office of the chairman of the Design Registration League at Room 1201, 373 Fourth avenue, New York City.

Electrical Heating Devices in the Home

Coincident with the advent of the first killing frost at this season of the year there should blossom forth in the show window of every electric shop a display of electrical heating devices for the home and other places where it is expedient to temper the chill incident to shorter days and approaching winter. From this time on, until the advent of summer breezes, an electrical heating device is about the most desirable appliance a home can possess.

Eventually the people of the temperate zone in this great country of ours will employ electricity to heat their homes throughout the coldest seasons at much less expense than the present method of heating with coal and other fuels. Until that time, however, it is a matter of much economy for the household to delay the firing of the furnace or base burner as long as possible and utilize the little electrical heater for producing just the proper temperature for comfort.

With the advent of actual winter, when a maximum of heat is required to make the home comfortable, the little electrical heater is not relegated to the closet. Extra heat is frequently required in the bathroom and the electric heating device is just right for that purpose. Then there are always isolated rooms and cold corners in every home where the device is a most welcome addition to the heating arrangement of the premises. Where there is a nursery occupied by small children, there is no better heat than that of the electrical device during the sleeping hours, because of the fact that electric heat does not befoul the air or offer danger.

There are many types of these devices now on the market and the contractor-dealer will find it good business policy to carry several types in order to meet the varying demands of the public. There are many ways of stimulating trade in electrical heating devices, but one of the better ways is to have them in the show window. An-

other plan is to place one of the radiators near the store entrance so that, as customers enter, the warm rays are directed upon them. Every dealer, if he is so minded, can hit upon some distinctive method of attracting attention to the devices with just a little ingenuity.

Taxation and Prosperity

The Unemployment Conference at Washington might very properly have turned to Congress, asserted flatly that our national legislature has been largely responsible for the conditions which cause unemployment, and demanded that it keep the pledge made in its name to revise the tax laws for the relief of business, frame tariff legislation that will start the factory wheels, and set men to work. This is the time for candid words. Nothing but prosperity will relieve the unemployment situation and we never can have prosperity as long as the life is ground out of business through a "playing-to-the-gallery" system of taxation. As long as Congress plays the political farce of trying to make the people believe they escape taxation when it is piled upon business in the guise of "wealth" and "capital," so long will depression prevail, unemployment follow, soup kitchens increase and bread lines extend.

The situation cannot be trifled with or disguised. The problem is to provide work for those willing to work. Opportunity to work can come only through business activities. The opportunity decreases in the proportion that business activities—commercial and industrial—are crippled and crushed by a taxation policy that is false in economics and is persisted in only because Congress lacks the courage to act.

Ventilating Fans and Blowers

Recently a manufacturer of electric ventilating units placed a fan in the show window of a contractor-dealer friend of his in Chicago. A few hours later the manager of a small industrial plant who happened to be passing the electric shop noticed the ventilating fan in the window. He went inside and inquired the price, saying he had been looking for a long time for just such a fan for his plant. The dealer took the order and passed it along to the manufacturer, at the same time placing an order for several units. Since then the contractor-dealer has sold and installed quite a number of ventilators and is going after the business in earnest.

In the Sept. 24 issue of ELECTRICAL REVIEW there appeared the first of a series of articles on ventilator fans and blowers. The second article appears in this issue. They open to the contractor-dealer who reads them carefully a practically new and lucrative field in electrical sales and installation. The articles are intended to illustrate various installations which have already been made and to advance some concise selling arguments for use of the contractor-dealer in obtaining the business.

The field for electrical ventilation is so broad that it takes in practically every building within the reach of electrical transmission. It will be just as impossible to exhaust this field as to exhaust the demand for electrical energy. Every home, office, store, eating place, public building, assembly hall, theater, church, bank, school, garage, shop, factory, and even farm building with electrical facilities is a prospective customer for electric ventilation. The manufacturers are now prepared to turn out a device for securing effective ventilation under any and every condition. They have their engineers who constantly study ventilating methods and who are prepared to help the contractor-dealer solve every problem of installation. The manufacturers, themselves, are just beginning to awaken to the immensity of the field and to seek a legitimate outlet for their products through the contractor-dealers.

It will not be difficult to sell ventilation when the contractor-dealer realizes that the appliance is most effective in promoting health, comfort, mental and physical efficiency as well as increase in trade and economy in every branch of human activity. The manufacturer furnishes very complete literature and advertising helps; so that this comparatively new line of business has been well developed and is ready for the dealer to do his part. State laws and rules of health departments, as well as local city ordinances, will be found of great assistance in the sale and installation of ventilating devices necessary to comply with sanitary requirements and safety. It is worth the contractor-dealer's time to procure and study these laws, ordinances and rules in their application to ventilation.

American Valuation

The comments herewith presented relative to the merits of the American valuation plan were taken from a statement by the tax attorney of one of the large American manufacturers of electrical equipment. The following quotations contain the essence of the statement:

"The American Valuation Association, composed of manufacturers and manufacturing associations of the country, feels there is little hope under present conditions of industry securing adequate protection against all foreign countries unless the American valuation plan of assessing import duties, as proposed in the Fordney tariff bill now before the Senate Finance Committee, is adopted. In other words, it agrees with Secre-

tary Hoover 'that with the unstable currency and exchange situation that we have today in a large part of Europe there is practically no other alternative.'

"In studying this matter, the Association has prepared some figures showing the value of currency of Great Britain, France, Germany and Japan, both before the world war and at the present. It shows among other things that on July 1, 1914, the German mark was worth in United States money $0.238, but on July 1, 1921, the same German mark was worth in United States money only $0.013; that in 1914 an ad valorem duty of 33⅓% imposed upon the foreign value of a German article costing 150 marks would amount to $11.90, but today, due to depreciation of the German mark, the duty at the same rate would amount to much less than that.

"In 1914 skilled laborers in Germany received about 8.7 marks per day, equivalent at that time to about $2.09. In January, 1920, such skilled laborers received the equivalent of $0.73 per day, which amount, if converted into marks at the rate of exchange prevailing on July 1, 1921, would mean 56 marks per day. Other things being equal, it follows that an article costing 150 marks in 1914 would cost about seven times that amount, or 1050 marks, in 1921. This 1050 marks in 1921 would be equivalent to about $13.65. An ad valorem duty on this amount at 33⅓% would amount to only $4.55 as against $11.90—the duty that would be collected at the same rate in 1914. But there is another important factor in the situation. Wages in Germany, measured in terms of United States money, have gone down materially since 1914. In 1914 skilled laborers in Germany received the equivalent of $2.09 per day. In January, 1920, they received the equivalent of only about $0.73 per day, notwithstanding the fact that they received a much greater number of marks per day. In the United States, on the other hand, wages have materially advanced during the same period.

"The ad valorem duty, therefore, instead of being made less than it was in 1914, as it certainly would be if imposed upon the foreign value today at any reasonable rate, should be made more because of the difference in labor costs between this country and Germany today as compared with 1914.

"From the foregoing it seems obvious that an ad valorem duty imposed in 1914, upon foreign value at a rate entirely adequate at that time, would constitute practically no protection at all today against German importations. If America continues the levying of ad valorem duties upon foreign value it must, in order to get adequate protection against German importations, make the rate so high as to constitute practically an embargo against those countries whose currency has not been much depreciated. In any event protection against Germany today under our present system probably means a prohibitive duty against many of the other foreign countries.

"If America cannot impose ad valorem duties today as a practical matter upon foreign value, and must impose ad valorem duties, then it would seem that the only alternative is to impose such duties upon the American value instead of the foreign."

Fires and Construction Cost

Nobody cares when unusable trash is burned up. Many seem to care little more when valuable material in the rough is consumed and still others do not grasp the meaning of the destruction by fire of buildings which not only represent years of nature's slow work to produce in the rough, but also human labor which in the total would amount to the value composed of the lives of many men.

The greater the cost of a necessary thing, the more deplorable is its destruction. In this respect, fire is two-edged; it not only destroys that which is valuable but makes it more expensive to reproduce that which it destroys. This follows just as certainly as the law of supply and demand affects the cost of anything. If in each year we burn up one-quarter of all new buildings constructed during that year, we have seriously affected the supply of such buildings. We have also required that one-quarter of the energy of the building industry be devoted to what may be considered as non-productive labor. Fire loss thus affects the law of supply and demand both ways; it cuts down the supply and increases the actual cost of the buildings available by the total of those burned.

Opposition may naturally be expected to certain movements looking to a reduction in the cost of building but all will in the end be benefited by the adoption of positive means whereby 90% of our unjustified fire loss may be eliminated.

Appliances in Canada

The popularity of electricity in Canada for lighting homes and operating household appliances is shown by the fact that 74.9% of the residences so situated that electricity is available for use, are wired. Electric flatirons are used in 45.7% of these; electric toasters in 18.2%; electrically-operated washing machines in 5.9%; electric fans in 5.4%; electrically operated vacuum cleaners in 5%; electric ranges in 3.1%; electrically-operated sewing machines in 1.2%; electric dishwashers in 0.7%, and electric refrigerators in 0.6%.

THE WEEK'S NEWS

Reports of Important Meetings, Developments and Other Happenings of the Electrical Industry and Its Allied Interests

INTEREST SHOWN IN MULTIPHASE RENEWABLE FUSE.

Visitors at the 24th annual convention of the American Mining Congress, held in the Coliseum, Chicago, Oct. 17-22, showed considerable interest in the "National Multiphase Renewable Fuse" being produced by the Federal Electric Co., 8700 South State street, Chicago. This fuse is arranged to completely cut off the supply of polyphase power to a motor circuit in case one fuse is blown for any reason. The people in charge of mine properties felt that a fuse of this character would have a wide field of usefulness in their work. A description and illustration of this fuse appeared in the Oct. 1, 1921, issue of ELECTRICAL REVIEW.

FIXTURE MARKET WILL MARK ERA OF PROSPERITY.

National Council of Lighting Fixture Manufacturers Plans to Make Milwaukee Convention Most Successful in Organization's History.

The members of the Executive Committee of the National Council of Lighting Fixture Manufacturers express themselves confidently as to the coming Fixture Market being one of the most successful ever yet held, and an examination of business conditions today unquestionably bears out this view. Let us admit that the past year has had many disappointments. There is no undue pessimism in admitting facts when even business leaders like Charles Schwab admit that the recent period of depression has been "the worst in 40 yrs." But there are just as many people in the world today as there ever were. They have just as many wants—electrical and otherwise—as they ever had, and they will be ready to satisfy them just as soon as they are sure that the worst is over.

Since lighting fixtures are perhaps the only electrical appliances which are found without exception in every home, office, industrial plant and city which has an electric supply, it is but logical that by far the larger proportion of the money expended by the public in electrical goods will be spent for lighting fixtures. Moreover, the still serious housing shortage which exists in practically all parts of the country will undoubtedly make for a great increase of building as soon as the coming of spring makes it possible to mix and place mortar and cement without taking elaborate precautions against freezing. "But," say the pessimists, "we have had so many 'false alarms' during the past year, how do we know that business—and particularly the lighting fixture business—will take an upward bound next spring?"

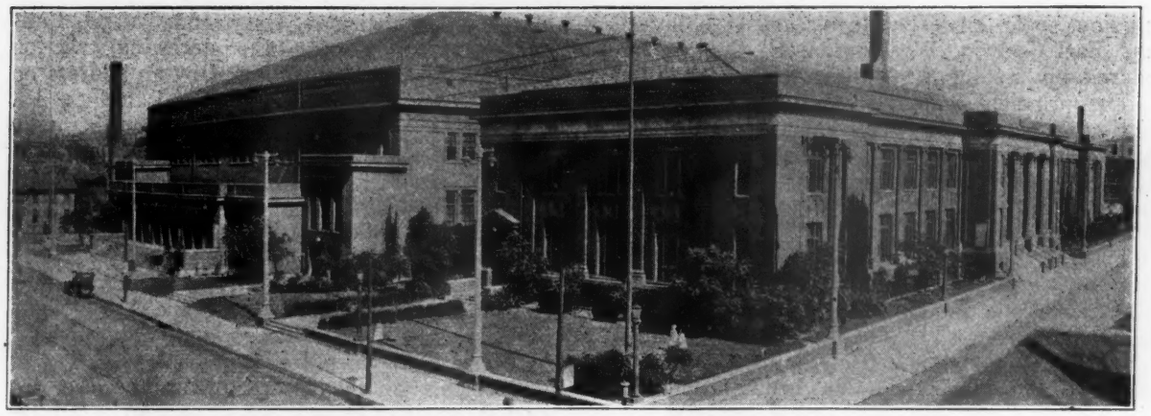
The answer is that labor and materials are already practically liquidated, and the variations from normal in commodity and labor prices are becoming steadily less. This question of variation of prices from their normal relations with other prices is even more important than the actual prices themselves. For instance, it mattered little to the fixture maker when his manufacturing costs increased 50% or more during the war, because his customers were getting about

F. R. Farmer,
President, National Council of Lighting Fixture Manufacturers. He has been re-elected president each year since 1919.

that much more for their products and services and they could afford to keep buying his products.

The serious factor in the recent situation, say the financial experts, was the wide discrepancy in prices. It meant that the manufacturer was unable to purchase certain of his materials at a price which would enable him to sell at a profit on a falling market, and compelled him to curtail his production. It meant that the general public, who had "enjoyed" a cut in wages, were no longer able to afford the lighting equipment which they needed.

Statistics show that this discrepancy in prices is steadily growing less. They indicate also that by the spring of 1922 we shall be "all set" for a steady run of prosperity. Everyone—manufacturers, jobbers and dealers alike—are now optimistic, and this feeling is being reflected in the letters received at the headquartrs of the National Council of Lighting Fixture Manufacturers. Even before any attempt had been made to sell space for the Fixture Market, requests for information and booth reservations came in rapidly. The fact, too, that many of those who had exhibited at the previous Market at Buffalo were anxious to increase their reservations for Milwaukee is a



The Milwaukee Auditorium Where the 1922 Lighting Fixture Market Will Be Held.

proof that they have been watching the "signs of the times" and are convinced that we are about to see an era of good business—not the frenzied unhealthy business of 1919 and 1920 which inevitably carried within it the seeds of its own destruction, but a progressive state of building up in which co-ordination of effort and fraternal helpfulness will play a greater part than ever before.

The National Council's preparations for the Milwaukee Fixture Market are more extensive than ever this year; and the Executive Committee, working in conjunction with the local Milwaukee Lighting Fixture Club, is leaving nothing undone to make the week of Jan. 30-Feb. 5 something which everyone interested in better lighting will remember as a record-breaking success. The Milwaukee Auditorium itself will contain 154 booths—a considerable increase, it will be remembered, over the booth-space available at Buffalo. In this way the Council hopes to obviate the necessity (which existed at Buffalo) of disappointing several members who deserved space. Whether, in view of the improvement in business conditions, even the Milwaukee Auditorium with its 46,800 sq. ft. of floor space will prove inadequate remains to be seen.

Concurrently with the Lighting Fixture Market a joint convention will be held, as at Buffalo. The National Council of Lighting Fixture Manufacturers, the Lighting Fixture Dealers' Society of America and the Illuminating Glassware Guild will assemble in force, and the exchange of views cannot fail to contribute to that greater co-ordination of effort so essential to the progress of the lighting fixture industry. In addition to this, a "Better Lighting Week" will be held. This was originally intended to be carried out at Buffalo last year, but the idea could not be put through at that time. The intervening months have however been utilized in working out the details very fully, and no efforts are being spared to make "Better Lighting Week" a record-breaking success.

Free surveys of existing lighting equipments—free reports on the improvements in lighting obtainable through the use of up-to-date methods—talks and demonstrations at the Fixture Market—all these will arouse an interest in lighting not only among the people of Milwaukee but also in other cities. In fact, the National Council is preparing to stage a convention and fixture market worthy of the revival of prosperity which far-sighted business men confidently expect in 1922.

Interior View of the Milwaukee Auditorium.

DISCUSS UTILITIES PROBLEMS AT WEST VIRGINIA MEETING.

"Water Purification Problems in West Virginia," "Selling the Utilities to the Public" and "The Regulation of Utilities" were among the subjects discussed at the annual convention of the Public Utilities Association of West Virginia, held at Charleston, W. Va., Oct. 20-21. The proceedings were opened with an address of welcome by Mayor Grant P. Hall, which was followed by the address of President Herbert Markle and the reports of the secretary and treasurer. C. E. Trowbridge, bacteriologist, American Water Works & Electric Co., New York City, read an interesting paper on "Water Purification Problems in West Virginia."

At the afternoon session of Thursday reports of the committees on technical, accounting and public relations sections were presented. George R. C. Wiles, West Virginia Public Service Com-

mission, spoke on "The Regulation of Utilities" and Earl Godwin, Washington, D. C., gave an address on "Selling the Utilities to the Public."

The principal address delivered at the association dinner at the Kanawha hotel in the evening of Oct. 20 was by J. P. Barnes, president, Louisville (Ky.) Railway Co., on "Some Pressing Problems of Public Utilities." William A. MacCorkle was toastmaster.

Friday morning's session opened with the reports of the Auditing Committee, Committee on Electrical Code and the Committee on Constitution and By-Laws. M. H. Aylesworth, executive manager, National Electric Light Association, gave an interesting address on "The Outlook for the Electric Light, Heat and Power Industry."

INDEPENDENT CONTRACTOR-DEALER REFERENCE BOOK.

The 17th annual reference book of the Independent Associated Electrical Contractor-Dealers of New York is now being distributed. This year, in addition to size of wire and conduit tables and information on a-c. power wiring and correct restaurant ventilation, the rules and regulations of the three big lighting companies—New York Edison, United Electric Light & Power Co. and the Brooklyn Edison Co.—have been included so that the contractor-dealer can familiarize himself with the conditions he must comply with. Other data and advertisements make the book valuable as a reference for the trade.

MERGER OF EASTERN ELECTRICAL SUPPLY FIRMS PLANNED.

Plans are under way for a merger of E. B. Latham & Co., the Royal Eastern Electrical Supply Co., the Sibley-Pitman Electric Corp., all of New York City, and the Tri-City Electric Co., Newark, N. J., all distributors of the products of the General Electric Co. The capital investment in the merger will aggregate several million dollars. Details are being arranged and it is expected to consummate the consolidation within the next 60 days. It is said that E. B. Latham will be president of the merged organizations.

INDIANA ASSOCIATION DISCUSSES "HOME ELECTRIC" IDEA.

Indianapolis Convention Featured by Addresses on Results of Harmonizing the Industry, Building a Business, Finance, Etc.

"The Home Electric Idea," "Building a Business" and "What a Trade Organization Can Do and What Some Are Doing" were among several of the important subjects discussed at the 18th annual convention of the Indiana State Association of Electrical Contractors and Dealers held recently in Indianapolis. The attendance was about 300 and while it was not as large as anticipated the lack of numbers was made up in the enthusiasm of the members present.

Thomas F. Hatfield, Indianapolis, opened the proceedings on the first day, the address of welcome being given by John B. Reynolds, secretary of the Indianapolis Chamber of Commerce. The formal opening of the meeting was by A. B. Harris, state chairman, Gary, Ind. V. G. Fullman, Pittsburgh, gave an interesting talk on "Finance," which was followed by an address on "The Home Electric Idea" by Laurence W. Davis, New York City, who talked very strongly in favor of the Indiana State Association adopting the "Home Electric" idea.

The following addresses were given in the afternoon: "Building a Business," by Don Prentice, Indianapolis; "Odds and Ends," by H. F. Weitzman, Indianapolis; "What a Trade Organization Can Do and What Some Are Doing," by Charles L. Estey, Chicago, and "Advertising," by Merle E. Sidener, Indianapolis.

Problems of the contractor-dealer were discussed at the second day's session. Samuel Adams Chase, special representative of the Westinghouse Electric & Manufacturing Co., New York City, gave an interesting address on "Results of Harmonizing the Industry."

The election of officers resulted as follows: State chairman and committeeman for the Central Division, Thomas F. Hatfield, Indianapolis; committeeman for the Northern Division, L. G. Granger; committeeman for Southern Division, A. L. Swanson, Evansville, Ind., and A. I. Clifford was re-elected secretary-treasurer.

A resolution was adopted permitting the division committeemen to select district committeemen to co-operate with them in increasing the membership and other matters pertaining to the division work. A resolution was also adopted thanking V. G. Fullman for so ably presenting the standard accounting system as operated by the National Association.

It was decided to hold the 19th annual convention of the Association at Terre Haute, Ind., the date to be announced later.

DISCUSS GOOD ILLUMINATION AT CHATTANOOGA MEETING.

Rural Distribution Lines and Other Subjects Considered at Ninth Annual Convention of Southeastern Geographic Division, N. E. L. A.

The ninth annual convention of the Southeastern Geographic Division of the National Electric Light Association, held at the Signal Mountain Inn, Chattanooga, Tenn., Oct. 17-18, was featured by addresses on "Taking Our Customers Into Partnership," by M. H. Aylesworth, executive manager, National Electric Light Association; "Good Illumination, Why It Pays," by A. S. Turner, Edison Lamp Works of General Electric Co., Harrison, N. J., and "Capitalizing Our Opportunity," by W. L. Goodwin, Society for Electrical Development, New York City.

The proceedings were opened with an address of welcome by the mayor of Chattanooga, Alexander W. Chambliss, with the response by Judge Lindsey. S. B. Irelan then delivered his address as president of the Southeastern Division, he being followed by Mr. Aylesworth.

On Tuesday morning John F. Gilchrist, Commonwealth Edison Co., Chicago, spoke, and following his remarks F. D. Mahoney, Alabama Power Co., Birmingham, Ala., gave an address on "Let the Public Be Preferred;" G. A. Sawin, Westinghouse Electric & Manufacturing Co., East

Pittsburgh, Pa., read a paper on "Rural Distribution Lines," and J. Prince Webster spoke on "The Port of Fair Values." On Tuesday evening A. S. Turner gave a demonstration of the principles of good illumination, which was followed by an interesting talk on "Capitalizing Our Opportunity" by W. L. Goodwin.

At Wednesday's session M. R. Bump, president, National Electric Light Association, and T. W. Martin, president, Alabama Power Co., addressed the members, following which the Meter Committee presented its report. A boat trip through the gorge of the Tennessee river was enjoyed in the afternoon.

MILWAUKEE ELECTRICAL SHOW TO BE HELD NEXT WEEK.

Electrical Appliances and Exhibit Showing Various Stages of Development of Light to Be Features of Food and Household Exposition.

Milwaukee will witness the third annual Food, Household and Electrical Exposition Oct. 25-31, under direction of the *Milwaukee Journal* cooperating with the Milwaukee Retail Grocers' Association. The exhibits will be located in the Auditorium. The electrical exposition will be held under the auspices of the Milwaukee Chapter of the Wisconsin State Association of Electrical Contractors and Dealers. A total of 300,000 sq. ft. of floor space will be used in the three divisions, viz., food, household and electrical, and of this the electrical exposition will occupy the largest amount of space with a total of 156 booths.

The electrical exhibits will be on display in Exposition Hall of the Auditorium, and among the exhibitors may be mentioned the following: Radio Club; Julius Andrae & Sons Co.; Chicago Fuse Co.; Electrical Trade Publishing Co.; Milwaukee division of electrical contractor-dealers; Polly Manufacturing Co.; Wisconsin Telephone Co.; Franco Electric Corp.; Piepkorn Electric Co.; Milwaukee Washing Machine Co.; Burdick Electric Co.; Wagner Manufacturing Co.; G. Q. Electric Co.; Home Comfort Co.; ELECTRICAL REVIEW; 1900 Washer Co.; Herman Andrae Electric Co.; Chandelier Club of Milwaukee; Electric Household Shop; Home Wiring Co.; Atlas Electric Co.; Milwaukee Manufacturing Co.; Delmar Electric Co.; Apex Rotapex Co.; Western Electric Co.; Berthold Electric Co.; Stenz Electric Co.; Minneapolis Heat Regulator Co.; Ideal Housewiring Co.; Krech Electric Co.; Lakeside Electric Co.; Chas. Polacheck & Bro. Co.; Majestic Electric Development Co.; Sorgel Electric Co.; Federal Electric Co.; Viltor Manufacturing Co.; Trester Service Electric Co., and many others.

Among the features of the exposition will be a $15,000 bungalow completely furnished and wired, with every convenience. Another feature will be the staging of a dance of an electric lamp; the young lady representing this lamp and doing the dance will be dressed in a colonial costume, and her dress will be studded with over 400 little electric light bulbs which will flash on and off as she dances. A wireless telephone outfit connected with the Pittsburgh Symphony Orchestra will give a daily concert to Milwaukee over the wireless radio telephone.

There will also be an exhibit showing the various stages of the development of light, from the prehistoric age to the present high-powered lamp. Arrangements have been made to have a grill conducted entirely by electricity, with individual toasters and lamps on each table, and about 100 other similar attractions will also be displayed.

GRATIFYING BUSINESS SECURED AT ELECTRICAL SHOW.

Exhibitors at New York Show Well Pleased With the Results Obtained—One Appliance Manufacturer Reports Contracts of $100,000.

The New York Electrical Show which closed recently proved to be not only a valuable factor in the educational sense in that it served to introduce to the public several important developments in the electrical industry, but an unusual business opportunity to manufacturers and dealers. Practically every manufacturer who took part in the show reports that business far exceeded his fondest expectations. Judging by these optimistic reports the long hoped for business revival, at least so far as it relates to the electrical industry, is well under way. Not only were many retail sales made to visitors, but retail agencies were established in new territories.

A dealer in electrical glassware such as boudoir lamps and fixtures closed at a single transaction an order for more than $14,000 worth of his product. Several smaller orders brought the total of his first week's business to more than double this. "I can frankly say that I should never have secured this business if I had not taken part in this show" was his comment. A manufacturer of violet ray machines of the household type sold more than 300 at retail and closed contracts for export business totaling $100,000.

The manufacturers of the mechanical servant girl report among their agency orders one sale of 2000 machines and another of 400, with several larger orders totaling 7500 machines. Dealers in electric ranges also report gratifying business, one manufacturer having sold more than 70 ranges of the combination coal-electric type. The same buying tendency is reported by manufacturers of dishwashers and laundry equipment.

During the first 4 days of the show one of the exhibitors of dishwashers sold 50 machines; the manufacturers of washing machines and ironers and other laundry equipment report many sales and long lists of prospects. They feel that when a visitor is interested enough to give his name and address and ask for a more leisurely demonstration that a sale is almost certain to follow. One of these manufacturers said "The exposition has been a big success. Our washer (it is one that embodies an entirely new principle of washing) has created intense interest and we are more than satisfied with results." A retailer who handles all types of household appliances is quoted as saying "The Electrical Show is the most successful way of bringing our products before the public."

A great many foreign buyers attended the show. A Japanese told one of the exhibitors he had come to New York solely for the purpose of attending the exposition and that he had placed

several orders for export to Japan. There were also orders for delivery in Norway and Sweden.

The several manufacturers of electric trucks who exhibited at the New York Electrical Show report gratifying results, both in actual and prospective sales. The Walter Motor Truck Corp. led all exhibitors in the number of actual sales. The locking differential and other new features resulted in the sale of 12 trucks to buyers who said they were gas truck users, anxious to try out the electric truck offerings. The Walker Vehicle Co. also made several sales and entertained numerous prospective buyers. The Commercial Truck Co. of Philadelphia made two sales. The Lansden Co. of Danbury, Conn., made one sale and entertained many prospective buyers at its exhibit.

"The exhibit of electric trucks, elevating platform industrial trucks and electrics will be a big feature of the 15th annual electrical show at the Grand Central Palace in 1922," said Charles R. Skinner, Jr., manager of the Automobile Bureau of The New York Edison Co., who has had charge of the automobile exhibits at the electrical shows. "This year," continued Mr. Skinner, "we were handicapped by lack of floor space and small entrances to the armory. At next year's show we will have exhibits in trucks ranging from half tonners to six tonners."

WATER SHORTAGE CURTAILS ELECTRIC SERVICE.

Electric power companies operating in the eastern section of the state are curtailing electric service to textile mills owing to water shortage. The Carolina Power & Light Co. and the Southern Power Co., with physical connection at Durham, N. C., have been severely affected during recent weeks. The first noted company has a large auxiliary steam plant at Raleigh, but has been unable to operate the station owing to the shortage of water in the municipal supply.

A. M. E. S. SECTION NAME CHANGED.

The Board of Governors of the Associated Manufacturers of Electrical Supplies formally approved at its September meeting the changing of the name of the Knife Switch Section to the Knife and Inclosed Switch Section. The section at its June meeting had voted for this change as it was felt that the new designation covered more comprehensively the work of the section which includes inclosed switches.

CIRCUIT-BREAKERS INSTALLED AT ILLINOIS UNIVERSITY.

A set of automatic reclosing circuit-breakers to be used for safety purposes on the main generators have been installed by the Department of Electrical Engineering of the University of Illinois, Urbana. The circuit-breakers were designed by A. R. Anderson, vice-president and general manager, Automatic Circuit-Breaker Co., Columbus, O. Mr. Anderson is a graduate of the Department of Electrical Engineering in the class of 1919 from the University of Illinois. Whenever a short-circuit or heavy overload on the generator occurs these circuit-breakers open automatically until the current becomes normal again. They will be connected with the machines which furnish direct power to the electrical laboratory of the University.

UNIVERSITY OF ILLINOIS PLANS ELECTRICAL SHOW.

Plans for the annual electrical show to be given by faculty and students of the electrical engineering department of the University of Illinois, Urbana, Ill., have been made. The show will be held next March or early in April, the exact date to be decided within the next few weeks. Since the close of the world war these shows have been revived and marked interest has been demonstrated in them by faculty, students and the public generally. The financial plans for the show are now being laid and when it is known how extensive the exhibition can be made, detailed plans as to exhibits will be formulated.

ELECTRIC HEATERS FOR AFRICA.

The reopening of the Cape Town, South Africa, market for electric heaters within a month or two is forecast by the British and South African *Export Gazette* in its September issue. New generators will, this journal reports, soon be installed at the municipal electricity works there and put an end to the almost complete cessation of imports of electrical heaters that has existed because of lack of current. In the opinion of the *Gazette*, "that means an immediate and valuable addition to the existing business in materials and appliances."

Officials of the Radio Corporation of America, Woolworth building, New York City, and representatives of the General Electric Co. and European radio interests, are holding a series of conferences at Paris, France, to perfect the establishment of an international wireless company for the control and operation of radio stations and facilities in all parts of the world.

COMING CONVENTIONS.

Telephone Pioneers of America. Tenth anniversary celebration and annual meeting, St. Louis, Oct. 24-25. Headquarters, Hotel Statler. Secretary, R. H. Starrett, 195 Broadway, New York City.

Electrical Exposition, Auditorium, Milwaukee, Oct. 25-31, under auspices of the Milwaukee Chapter of the Wisconsin State Association of Electrical Contractors and Dealers, in connection with the Third Annual Food and Household Exposition, directed by the Milwaukee Journal.

Texas Section of the American Society of Civil Engineers. Fall meeting, Dallas, Tex., Oct. 28-29. Secretary, E. N. Noyes, 1107 Dallas County Bank building, Dallas, Tex.

American Institute of Chemical Engineers. Fourteenth annual meeting, Baltimore, Dec. 6-9. Secretary, John C. Olsen, Polytechnic Institute, Brooklyn, N. Y.

Lighting Fixture Dealers' Society of America. Annual convention, Milwaukee, Jan. 30-Feb. 2. Secretary, J. L. Wolf, Builders' Exchange, Cleveland.

National Council of Lighting Fixture Manufacturers. Annual convention and Lighting Fixture Market, Auditorium, Milwaukee, Jan. 30-Feb. 4. Secretary, Charles H. Hofrichter, 281 Gordon Square building, Cleveland.

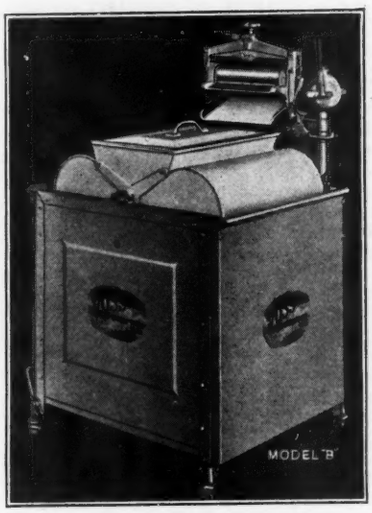
APPLIANCES and DEVELOPMENTS

New, Improved or Interesting Electrical and Mechanical Apparatus and Devices, and Applications of Equipment and Methods in Practice

Features of the Voss "Sea Wave" Electric Washer.

The new Voss "Sea Wave" model "B" washer, manufactured by the Voss Bros. Manufacturing Co., Davenport, Ia., is shown in the accompanying illustration. The main features of this machine are thus enumerated by the manufacturer:

The cabinet is of heavy sheet steel panels, rigidly braced, inclosing all working parts. The tub is of 6-sheet capacity and is made of heavy copper,



Voss "Sea Wave" Model "B" Electric Washer.

the inside being heavily tinned. The seams are all double folded and soldered. There are no corrugations or holes to catch buttons or injure the clothes. The tub is of the oscillating type, producing a powerful figure-8 movement of the water. The adjustment of the wringer is such that it can be swung into three positions, swinging and reversible, with sliding drain board and safety release. The motor is of special design and of 0.25 hp., for either a-c. or d-c. service.

The height of the washer to top of frame is 31.25 ins.; height to top of tub, 36.5 ins.; width, 29 by 31.5 ins.; height over wringer, 51 ins.; height to center of wringer roll 43 ins. The weight of the machine, uncrated, is 213 lbs. The machine is equipped with two removable doors, allowing easy access to the washer mechanism. Extra heavy casters, with locking device, are provided. The frame is built of angle iron solidly braced, insuring rigidity and absence of vibration. The gears are high speed, machine cut, insuring long wear without noise. Only two levers are required to operate the wringer and washer, the clutch lever to set the tub in motion and the wringer control lever being within easy reach of the operator at all times. The washer is provided with belt drive direct from the motor to the driving pulley. The tub is finished in white enamel, baked on, the cabinet being finished with sea green enamel and the wringer in natural color.

Combination Range for Cooking by Electricity and Coal.

The merits of the Magee "ElectriCoal" range are set forth in a handsome 12-page catalog recently distributed by the Magee Furnace Co., 36 Union street, Boston. The catalog is bound in imitation leather, the size being 12.75 by 9.5 ins. On page 4 appears a photograph of the Magee "ElectriCoal" range in "Por-cel-a"—pearl gray—finish, the opposite page containing a photograph of the range in the original, or ebony black, finish. Illustrations of the various awards received by the Magee Furnace Co. for its ranges and heaters are depicted on page 10 of the catalog. The center of the catalog contains the following data relative to the Magee "ElectriCoal" range:

"As designers and manufacturers of heating and cooking apparatus for over 60 yrs., the Magee Furnace Co., with its products in use in all parts of the United States, realized the large demand for combination cooking by electricity and coal (together or separately) and as a result have created the 'ElectriCoal' range for double service; practically the only one of its kind in this country. To meet this demand from the standpoint of electricity special licenses were obtained through the General Electric Co. and arrangements were later entered into with the Edison Electric Appliance Co., Inc., to use their renowned cooking units. After exhaustive tests by the Edison company's experts, and by those of the Magee Furnace Co., the 'ElectriCoal' has been completed and approved, no expense having been spared to produce probably the finest range in the world. The alliance of the names 'Edison' and 'Magee' bespeaks the highest possible attainment and guarantee of satisfaction in cooking apparatus by electricity and coal. It also pays tribute to the genius of Benjamin Franklin, pioneer in electricity and originator of the first stove.

"The Magee 'ElectriCoal' (46 ins. in length, 35 ins. in width and 59 ins. in height to the center of the electric oven) is dual in its makeup, one-half being devoted to electricity and the other to coal. This combination makes possible a cool kitchen in summer and a warm one in winter, together with the convenience of using both fuels at one time, if desired, or independently, as the case may require or circumstances demand.

"The electric oven, 19 ins. wide, 15 ins. deep, 13 ins. high, lined with silver colored sheet metal (rustless), situated above the cooking top, is fitted with light aluminum-plated racks and may be heated by its two units (upper and lower) in a few minutes to 500 deg. or over for any quick demands made upon it. On account of the complete insulation of its walls it is a perfect fireless cooker, as it retains for a sufficient time a baking or roasting temperature after the electricity is turned off. This results in maximum economy and efficiency; and it also proves true of the top cooking discs as the stored heat is retained in them for a time without current. The electric oven is especially adapted for broiling and roasting, suitable pans (enameled and aluminum) being provided for such purposes, the latter also for use in the coal oven. Toasting may also be done in this compartment. The switchboard is conveniently located directly in front of one large (8.5-in. diam.) and two regular (6.75-in. diam.) top electric cooking discs, these being interchangeable as to location. The electrical appliances are controlled from this board—quick indicating porcelain switch buttons being used. All units can be regulated to three heats—high, medium and low, and are operated as easily as the turning on and off of an electric light. All are of sheathed wire (protected type) and being 'Edison' are obtainable the country over. The full load is 5900 watts.

"On the electric end of the range, with the 'Magee' special air-cooled chamber, under the top cooking discs are switches and fuses accessible from the front. An outlet receptacle for attaching washing or ironing machines, flat iron, or anything of a similar nature, is also found on this end. Both electric and coal oven doors are equipped with reliable heat indicators. In-

Magee "ElectriCoal" Range.

formation regarding thermostatic control furnished on request.

"The coal oven, 18 ins. wide, 20 ins. deep, 12 ins. high, fitted with adjustable racks and finished in dull gray and nickel, is heated (on five sides), ventilated and controlled by the approved 'Magee' system of flues, dampers, drafts, and checks, standard for more than half a century. The coal-firebox is of a size proportioned for the proper heating of the top surface, containing four 8-in. boiling holes, the oven and a range boiler (capacity up to 50 gals.) brass coil with couplings (assuring clear water) for such work being furnished as an extra when so required. The mechanical grate used is of the Dock-ash pattern, the best of its kind known. The ash pan being directly under the grate is removed through an opening in the front. A drop door for broiling is conveniently located under the front cover holes which are directly over the coalfire (special wire broiler being provided). An interesting feature of the 'ElectriCoal' (in either pearl gray or ebony black) is the large, polished and washable top surface (28 ins. wide by 46 ins. long) at all times available for general use, whether in full or part operation. If it is desired to heat water by electricity a heater is provided. As an auxiliary this has advantages for small and quick work. The price is moderate.

"The name 'Por-cel-a' is applied to a special pearl gray enameled surface process at a temperature of 1400 deg. F., becoming, when cooled, almost as hard as the iron itself. This range, artistic in design, can be furnished in pearl gray 'Por-cel-a' or ebony black, trimmed with nickel, and with white enameled (sanitary) splasher back; the smallest details, from the slow cooking cover and graduated lid on the coal top to the polished towel rods on the left end, together with the glass rests under the legs, having been given the most careful attention. The pearl gray 'Por-cel-a' offers advantages from the standpoint of washing as against blacking, and will appeal to those who would discriminate. The range, with selected castings in ebony black, has also unusual beauty in original finish and is sold at a lesser cost.

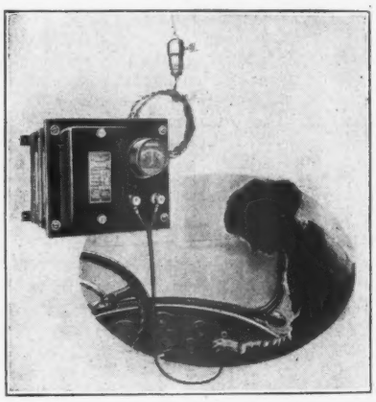
"Where conditions are favorable (a chimney with two flues—one smoke and one vent) we suggest the use of a canopy and ventilator over the range for the removable of cooking odors, steam, etc., from the kitchen. We furnish such, at an additional cost, made of the best material (34 ins. wide, 58 ins. long, 16 ins. deep, to be fastened to the chimney breast at a height of 72 ins. from floor to the bottom edge of the canopy) with the outside in pearl gray or ebony black to correspond with the color of the range. The inside of the canopy is white and is finished around the outer edge with a nickel band.

Note.—Incandescent lamps for the inside of the canopy, with a controlling switch on the wall, can be furnished and connected by any local electrician, if an overhead light is desired for dark days or evening use.

"Ventilator (outside measure 10 by 12 ins.) is white enamel with square lattice work, and is fitted with cords and metal indicator handles. These ranges are so carefully packed and crated (maximum weight 900 lbs.), with general instructions so complete, that they can be shipped, installed and operated anywhere and by anyone competent."

New Device for Charging Automobile Batteries.

An ingenious and timely device for the motorist has been perfected by the Automatic Electrical Devices Co., 120 West Third street, Cincinnati, which is being marketed under the trade name of "Homcharger." As its name implies this device is for charging the starting, lighting and ignition batteries forming a part of all modern motor cars, in the motorist's own garage. Because of the inability of the generator on a car to keep its batteries fully charged at all times, the average life of a starting battery is less than one year. As present-day



"Homcharger" Device for Charging Automobile Batteries.

practice is toward the elimination of the high-tension magneto and the substitution of battery ignition, to say nothing of the various battery operated accessories, such as spot lights, cigar lighters, etc., this produces a strain upon the battery which cannot be taken care of by the present generators. This fact is better illustrated by the thousands of battery-service stations springing up all over the country, all of which are doing a thriving business in the charging and replacing of motor car batteries. All service station charging, and at least 50% of the replacements and repairs now made at them, can be eliminated through the use of the "Homcharger," it is stated.

This device is a very small and neat affair, measuring 5.5 by 7 by 7 ins., designed for mounting upon the garage wall, and can be attached to suitable outlet. In order to facilitate the charging of motor car batteries without tearing up the floor boards to attach charging wires, or without removing the battery from the car, a neat nickelplated receptacle is furnished for mounting upon the dash board which is connected permanently to the wiring of the car. Thereafter it is only necessary to insert the charging plug of the "Homcharger" into this receptacle and the battery immediately starts to charge. The standard "Homcharger" as designed for individual use, will fully charge any ordinary 6 or 12-volt battery overnight, at a nominal cost. One such charge per week will keep any battery in "the pink" of condition, thereby greatly increasing its life and insuring the user of a quick start, bright lights, and ignition at all times. As the charging rate automatically tapers as the battery becomes charged, no harm results if the battery should be left connected indefinitely. On the contrary such overcharging tends to break down any sulphating which might exist on battery plates, thereby lengthening its life.

The "Homcharger" consists of a stepdown transformer and a simple rectifying "valve" which delivers a unidirectional current to the battery. An ammeter is furnished which shows the charging rate at all times, together with a 10-ft. charging cable and plug to facilitate connection to the battery. The rectifying "valve" which is the heart of the "Homcharger" is actuated by an entirely new principle which permits of satisfactory operation over a wide variation of frequency, voltage, etc. But one moving part is used, this being an armature vibrating in a variable magnetic field, actuating two metallic contacts so as to open and close the charging circuit at definite points during each cycle, thereby delivering to the battery a current of constant polarity. This armature, the only moving part of the entire device, is not subject to any wear and will last for a long time. The two contacts, which are the only wearing parts, are good for approximately 50,000 hrs. of operation, and may be replaced when worn out at a cost of $0 50 each. In order to facilitate replacement of these contacts, they are removable as a unit with the armature by the loosening of two screws.

The "Homcharger" is automatic in every way and entirely fool-proof. Regardless of how the batteries are connected, or the charging plug inserted, it is stated that the device will automatically deliver electricity of the proper polarity, thereby eliminating the possibility of reverse charging. Should the alternating supply be interrupted while batteries are connected, the "Homcharger" stops, but automatically restarts as soon as power is restored. As soon as the battery is disconnected from the "Homcharger" it automatically stops, thereby permitting the alternating supply to be left on over an indefinite period without any consumption of current. When batteries are disconnected the charging leads may be short-circuited as there is no current flowing through them under such condition. The secondary of the transformer is entirely insulated from the primary which eliminates all danger of electric shock and makes the "Homcharger" absolutely safe, even in the hands of a child.

The "Homcharger" is manufactured for use on a-c. circuits of all frequencies and voltages and for charging either lead or Edison type cells of the sizes ordinarily used for motor car work. A modified type is also manufactured for use on d-c. circuits, and either may be used successfully for charging the smaller sized batteries in operating signal circuits, telephone exchanges, wireless outfits, etc. Catalog No. 728, issued by the Automatic Electrical Devices Co., describes the "Homcharger" in detail.

A Vacuum Cleaner for Cleaning Automobile Upholstery.

A new vacuum cleaner, designed and built primarily for cleaning the upholstery of closed cars, has just been put on the market by the Wisconsin

Electric Co., Racine, Wis. It is known as the "Dumore" upholstery cleaner. Every owner of a closed car knows what a problem it is to get rid of the dust and dirt that settles in upholstery. It is the most difficult kind of dirt to dislodge, and yet it quickly yields to the "Dumore" vacuum method. The powerful suction rapidly draws the grit into the dust sack as it is loosened from the upholstery.

The cleaner is portable and easily carried about from place to place and very convenient to operate. When in use it is placed on the ground outside the car away from the operator, and does not interfere with his work. A 10-ft. length of flexible hose is furnished, on the end of which is attached a swivel hand-grip or nozzle. This construction permits freedom of motion at all angles, regardless of how much the hose is twisted about. The brushes, of China bristles and leather bound, will not injure the most delicate fabrics. The motor is a "Dumore" universal type and operates on either direct or alternating current. The base is hard wood with an ebony

"Dumore" Upholstery Cleaner in Operation.

finish, on which is located a "kick" type switch.

It is stated that many automobile owners find additional uses for the "Dumore" by carrying it into the house and cleaning upholstery, draperies and garments. The cleaner comes complete with 25 ft. of portable cord and attachment plug. Its net weight is 13 lbs.

Methods of Increasing Christmas Tree Lights.

To enable users of Christmas tree lighting outfits to build up their own 16, 24 or 32-light sets as their requirements and desires demand, the Triangle Electric Trading Co., 77A Chambers street, New York City, has produced two different types. By means of the Triangle assembling block No. 100, which is a loose junction box, equipped with a 6-ft. cord, 2-piece standard plug and contains four parallel-blade notches, one, two, three or four 8-light units may be plugged in. In this method all of the units have a central starting point.

When it is desired to make the outfit of 16 or more lights one continuous string of lamps the Triangle single unit type No. 200 with Edison base connecting socket should be used, as the plug of one 8-light unit can be inserted into the socket of another and into the outlet of the second unit

Triangle Christmas Tree Lighting Outfit.

the plug of the third set can be inserted. Thus a series of lamps is formed and the lights may be distributed over a larger surface of the tree.

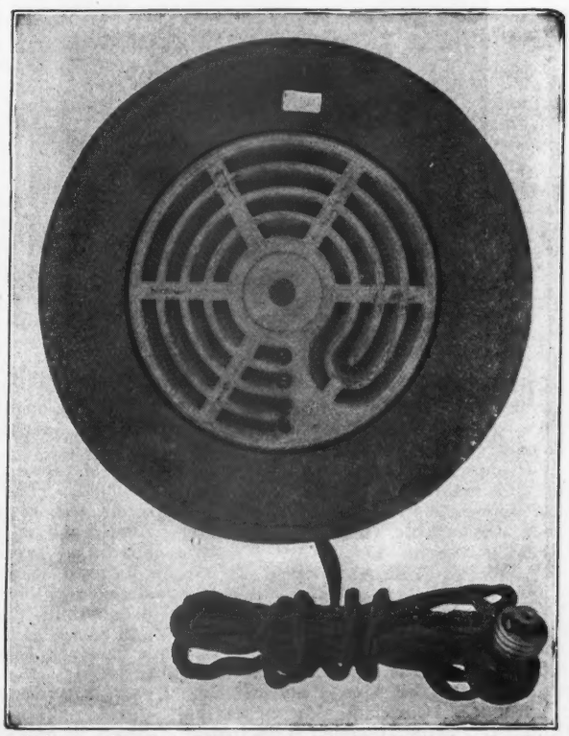
The Triangle company also manufactures a standard series and battery multiple type outfits and imports a line of fancy decorative lamps to burn in series with 14-volt mazda lamps. With all of these outfits either colored mazda lamps, decorative lamps or combinations of the two can be used.

Electric Hot Plate Made to Fit Any Gas Stove.

In these modern times when electricity is becoming more widely utilized every day there is a market for every electrical appliance for the home. The up-to-date housewife has installed in her home various labor-saving devices, such as vacuum cleaners, washing machines, ironers, etc., and is now turning her attention more and more to providing her kitchen with electrical appliances for cooking.

Many aggressive manufacturers realizing the extensive market for electrical goods of all kinds are meeting the demand with useful appliances, and the contractor-dealer is securing numbers of satisfied customers through offering devices of merit.

It is a recognized fact that the average woman wants to cook with electricity and here is an opportunity for her to do it at a nominal cost by the use of Tucker's "Always Ready" electric hot plate, made by the Tucker Manufacturing Co., 1372 West Third street, Cleveland. The manufacturer states that the appliance is made from cast iron, the same as a stove, and is very substantial and safe. It is 9.5 ins. across the top, 6 ins. across the bottom and fits any gas stove. The accompanying illustration shows the hot plate ready for connecting up.



"Always Ready" Electric Hot Plate, Made by Tucker Manufacturing Co.

Booklet on Self-Cooled Motor Propeller Fans.

The Ilg Electric Ventilating Co., 2850 North Crawford avenue, Chicago, manufacturer of self-cooled motor propeller fans, blowers, exhausters, automatic shutters and conditioning apparatus, has issued a new 1921 edition covering its self-cooled motor propeller fans. The booklet illustrates and describes the "Ilg" patented self-cooled feature and depicts propeller fan installations for offices, garages, theaters, laundries, restaurants, industrial plants, residence kitchens, drying by circulation, etc.

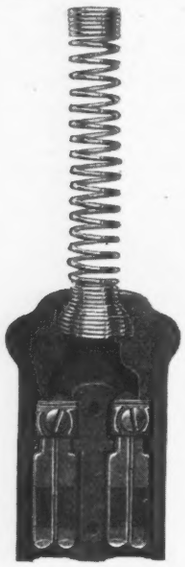
The booklet also gives price list and data on propeller fans for d-c. and a-c. service, and contains information on "Ilg" farm barn power ventilators, propeller fan guards, automatic shutters, and standard propeller fans in penthouses instead of vertical running fans.

Connector Plug to Fit Round or Flat Terminals.

Contractor-dealers doing repair work on connector plugs of electric toasters, irons, stoves, room heaters and other appliances would do well to look into the merits of the "Real" connector plug made by T. C. Smith & Co., 1531 Cherry street, Philadelphia, since it will fit either round or flat terminals and has a spring tempered chrome vanadium steel grip surrounding the brass contact and producing positive and real contact.

In external appearance the "Real" connector plug looks like any other, but differs radically internally. Brass is the metal used for conductivity, while the metal for the spring contact

is chrome vanadium steel. The contact opening is from the side and not the end, thus producing parallel con-



"Real" Connector Plug.

tact for the full length of the inserted terminals. This reduces resistance, arcing and heating in the plug, and the addition of ventilating holes keeps the plug cooler and prevents burning and charring of insulation. The cord end of the connector is fitted with an extremely flexible coil spring and the space below the choke for winding the choke grip is generous.

The connector plug is sold separate and also as a "Real" cord and plug unit consisting of 6 ft. of flexible cord, a separable socket plug and a "Real" connector plug.

"Rotarex" Ironer With Double Roll Feature.

A new product has been placed on the market by the Apex Electrical Distributing Co., Cleveland, known as the "Rotarex" home double roll ironer. This ironer, formerly called the "Gould," was bought from the Gould Appliance Co. by the Apex Electrical Distributing Co. recently, and the name "Rotarex" has been given to it to ally it more closely with the Apex company's other products, the "Apex" electric suction cleaner and the "Rotarex" electric clothes washer. It is stated that a number of improvements are being made by the new owners.

The double roll feature of the "Rotarex" ironer is claimed to be unique. The first roll smooths the linen, while the second finishes and dries it. Because of this double roll feature it is possible to iron clothes direct from the wringer. This the housewife will find especially desirable in stormy weather, or when in a hurry for her clothes, as the "Rotarex" eliminates the necessity of hanging up the clothes, it is stated. Visibility of ironing, automatic foot control and a special collar and ruffler attachment are all features of the "Rotarex" ironer, which is built substantially for long service.

An Electric Cooker Suitable for Apartment Service.

The Cook Electric Heating Co., Cleveland, has recently placed on the market an electric cooker, which is shown in the accompanying illustration. This appliance has a capacity of 1000 watts. It is composed of an oven and two griddles, one of which is of the heavy-duty type which will retain its heat long after the current is shut off.

In the construction of the oven a special soapstone composition is used, which the manufacturer claims retains the heat longer than any other known material. The oven is insulated with mineral wool and substantially constructed. The Cook electric cooker meets the requirements of any small family and is particularly desirable for apartment service. The device can be connected to any suitable outlet. It is stated that the Cook electric cooker will do anything that an electric range does and cooks, bakes, roasts and fries quickly and economically.

"Rotarex" Home Double Roll Ironer.

The Cook Electric Cooker.

"Royal" Vibrator in a Counter-Display Package.

The P. A. Geier Co. of Cleveland, manufacturer of the "Royal" electric cleaner and other appliances, has announced a new model of its "Royal" vibrator. Realizing the trade's need for counter-display packages which will attract attention and serve as "silent salesmen," the company has devised for this appliance the container shown in the accompanying illustration. When the box is open the inside cover space usually wasted and yet so valuable for display purposes is used for the trade mark and price announcement.

New Model of "Royal" Vibrator.

The new vibrator is furnished complete with four applicators, 8 ft. of reinforced multiple strand cord and an oiler. The instrument itself has all the fine features of the regular "Royal" vibrators, is light in weight, carefully balanced and runs smoothly, without a suggestion of mechanical clatter. Its high-powered motor is equipped with a special control so that speed and strength of vibration can be adapted exactly to the individual needs of the user.

Miller Reese Hutchinson, Inc., a New Hampshire corporation, has filed notice of organization to operate in New York, with a capital of 50,000 shares of preferred stock and 250,000 shares of common stock, for the manufacture of electrical machinery. A. B. Merserlin, 233 Broadway, New York City, represents the company.

ACTIVITIES IN THE TRADE

Business Developments, Sales Agencies, Trade Literature and Miscellaneous Items Concerning Electrical Manufacturers and Allied Business Interests

Landers, Frary & Clark Co., New Britain, Conn., has placed operations on an overtime basis in its electrical goods manufacturing departments.

Larner-Johnson Valve & Engineering Co., Philadelphia, has announced that its offices have been moved from 1044 Widener building to 507 Colonial Trust building.

Cassidy Co., Inc., 15 Wilbur avenue, Long Island City, N. Y., has announced a display of table lamps in forged gold—a new adaptation from an old craft—at its New York showrooms, 101 Park avenue.

Liberty Electric & Manufacturing Co., 95 North Third street, Memphis, Tenn., is planning the erection of a 1-story plant to cost about $15,000. Regan & Weller, Bank of Commerce building, are architects.

McClellan & Langhoff, Urbana, Ill., have purchased the electrical appliance stock of the Swartz Electric Shop and will do a general contracting and electrical supply business. Both are former employes of the Swartz Electric Shop.

Sausaman-Bradley Co., 441 Monadnock block, Chicago, has announced that it has been made distributor in the state of Illinois for the "Sunnysuds" electric washing machine manufactured by Sunny Line Appliances, Inc., of Detroit.

Delco Light Products Co., Davenport, Ia., suffered a loss of about $1500 recently when fire destroyed the arts building at the LaSalle County Fair at Ottawa, Ill. E. L. Mullin, in charge of the Delco display, stated that a water system, power stand, light plant and a number of electric motors were burned.

I. R. Nelson Co., Bond street, Newark, N. J., electrical repairing and manufacturing, has announced the creation of a new department to distribute such electrical supplies as wire, fuses, brushes, friction tape, insulating materials, sockets, mazda lamps, etc., to meet the needs of the industrial concerns in the territory.

Henry D. Sears, 80 Boylston street, Boston, general sales agent for Weber wiring devices, has announced that arrangements have been concluded with W. H. Beaven, Jefferson County Bank building, Birmingham, Ala., to represent him in North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas and Louisiana.

Sun-Ray Manufacturing Co., 720 South Main street, Oshkosh, Wis., manufacturer of electric heating pads, has announced that Robert E. Rae, with offices at 38 Murray street, New York City, has been appointed its Eastern representative with exclusive charge of sales in New York, New Jersey and most of Pennsylvania; F. K. Simons Electric Co., with offices in the Fuller building, Philadelphia, has been appointed exclusive distributing agent for southeastern Pennsylvania, Maryland, West Virginia and Virginia; A. F. McCarthy Co., with offices at 10 High street, Boston, has been appointed exclusive sales representatives for the New England states, and R. S. Wakefield, with offices at 222 Interurban building, Dallas, Tex., is the company's exclusive sales representative for the south central states.

Crouse-Hinds Co., Syracuse, N. Y., has recently issued a booklet entitled "Condulets," which is a consolidation of bulletins Nos. 1000M, 1000N, 1000P and 1000R, covering condulets for steam and electric railroads and industrial plants; "Mogul Obround" series of condulet bodies for large cover openings, and condulet fixture joint and extensions.

Westinghouse Electric & Manufacturing Co., Trenton, N. J., has inaugurated a full 5-day week at its local plant, effective at once. The plant is giving employment to about 300 operatives, and since the first of the year has been on a 4- and 4.5-day working schedule. The Trenton works are devoted to the manufacture of electric lamps and affiliated specialties.

Anderson Electric & Equipment Co., 154 Whiting street, Chicago, has announced that A. I. Appleton, of the Appleton Electric Co. of Chicago, is acquiring the controlling interest in the Anderson Electric & Equipment Co. from B. J. and O. E. Grigsby. Among the well-known products of the Anderson company are the "Auto Reelite" and "Reelite" extension automobile and electric lighting devices.

Coast Equipment Co., San Francisco, has opened a branch office at 309 Lewis building, Portland, Ore. This concern is sales representative for several eastern manufacturers of electrical equipment, including the Pittsburgh Transformer Co., Ridgway Dynamo & Engine Co., Sundh Electric Co., Mechanical Appliance Co., and the Hopewell Insulation & Manufacturing Co. E. H. Albrecht is in charge of the Portland office.

Duparquet, Huot & Moneuse, 108-114 West 22d street, New York City, has just issued catalog No. 23 dealing with heavy-duty electric kitchen equipment for hotels, cafeterias, restaurants, clubs, institutions, steamships and private families. It is in loose-leaf form, consisting of 46 pages of heavy coated paper with a profusion of illustrations, making the catalog invaluable as a reference book. The information is attractively presented, well arranged and indexed.

English Electric Co. of Canada, Toronto, Ont., which recently absorbed the Canadian Crocker-Wheeler Co., St. Catherines, Ont., has made the following additions to its board of directors: Lord Meston, chairman of finance committee of English Electric Co. of Great Britain; Lt. Col. Sir. John M. Mansell, director of the British company, and P. J. Pybus, managing director of the British company. Mr. Pybus also becomes chairman of the London advisory committee. An offering of $2,000,000 8% cumulative preferred stock of the Canadian company is being made.

Cuban Telephone Co., 61 Broadway, New York City, operating at Havana and other points in Cuba, has arranged for a bond issue of $4,000,000, the proceeds to be used for general operations, extensions, improvements, etc.

Ilg Electric Ventilating Co., 2850 North Crawford avenue, Chicago, is planning a window display prize contest for Dec. 3-10 among all "Ilg" dealers who have its display stand, the contest to be based on a Christmas appeal.

Electrical Dynamic Co., Bayonne, N. J., has issued bulletin No. 300 illustrating and describing the facilities of the company for producing electrical machinery. The illustrations show electric motors in process of manufacture, ranging in size from 0.5 to 1000-h.p., both for a-c. and d-c. service.

Taylor O. K. Manufacturing Co., Ltd., 11 Youville street, Hull, Que., Can., which was recently incorporated with a capital of $200,000 to manufacture storage batteries, etc., has elected the following officers: President, H. A. Champaigne; general manager, Ray Murray, and secretary-treasurer, J. W. Ste. Marie.

Perfection Hoist & Engine Co., 221 Grand avenue, Milwaukee, manufacturer of farm-lighting plants and mechanical horizontal hoists for motor dump trucks, plans to locate its permanent works and headquarters at Two Rivers, Wis., where it has purchased the former plant of the Two Rivers Plating & Manufacturing Co.

Mountain Telephone Co., Bristol, Tenn., recently organized with a capital of $1,000,000, is plannning the installation of a telephone system throughout the Bristol district. The different municipalities to be connected by the system will include Bristol, Johnson City, Tenn.; Mountain City, Tenn.; Glade Springs, Va.; Abingdon and Damascus, Va.

Edison Lamp Works of General Electric Co., Harrison, N. J., has recently issued a bulletin entitled "Railway System of Lighting Buildings and Yards," containing an article on modern lighting practice in railway shops, terminals, yards, etc., and equipment needed. A pamphlet entitled "Reflectors for Incandescent Lamps," contains a general discussion, classification of reflectors, and illustrations and data covering different types for a wide range of applications, including industrial plants, commercial lighting, etc.

PERSONAL MENTION

Biographical Sketches and Chronicle of Changes in Business Connections, Promotions and Other Personal News of the Industry

JOHN HINDS has been elected vice-president of the Philadelphia (Pa.) Insulated Wire Co., in charge of sales.

JOHN F. MILLER, vice-president of the Westinghouse Air Brake Co., Pittsburgh, has been elected one of the alumni trustees of Wooster College, Wooster, O.

THOMAS A. EDISON, West Orange, N. J., has returned to his laboratory, following a slight illness which confined him to his home for several days.

L. R. KRUMM, electrical engineer, tendered an address before the members of the Philadelphia (Pa.) Electric Club at a noon-day meeting Oct. 6, on the subject of "Possibilities in the Use of Radio."

GEORGE W UPTON, a retired business man of Warren, O., has been appointed by the President a member of the Federal Trade Commission to succeed Commissioner Pollard, whose term has expired.

A. L. HUMPHREY, president of the Westinghouse Airbrake Co., Wilmerding, Pa., has been notified by President Harding that he has been included in the appointments of members to the conference on unemployment.

HENRY TIDEMAN, president and founder of the Tideman Electric Company, Cairo, Ill., manufacturer of electric fans and fractional horsepower motors, has resigned. Mr. Tideman has not yet announced his plans for the future.

HEBERT LLOYD, president of the Electric Storage Battery Co., Philadelphia, Pa., has returned from a trip abroad, where he spent a number of days at the plant of the English subsidiary company, for inspection and other purposes.

JOSEPH HALL, for the past 10 yrs. in charge of the plating department of Landers, Frary & Clark, New Britain, Conn., manufacturers of electrical appliances, cutlery, silverware, vacuum specialties, etc., has resigned to become supervisor of the plating department of the Waterbury (Conn.) Manufacturing Co.

W. H. MORTON, formerly secretary-treasurer of the National Association of Electrical Contractors and Dealers, is now firmly re-established in the electrical construction business as secretary and general manager of the Sanborn Electric Co., 309-311 Illinois street, Indianapolis. In his new position Mr. Morton is proceeding to put into practical employment some of the excellent ideas he advocated in his successful upbuilding of the National Association. Because of his many years' association with the National organization there was sincere mutual regret when Mr. Morton severed his connection to enter into private business. The regret of the National Association was most expressively voiced by President James R. Strong in an announcement to the members of the Association which also contained the election of Farquson Johnson to succeed to the post vacated by Mr. Morton. Practically every contractor-dealer in the United States and Canada knows the history of the activities of Mr. Morton. It is a history replete with good deeds well accomplished. Gerry M. Sanborn,

W. H. Morton.

head of the Sanborn Electric Co., is a long-time friend of Mr. Morton. They worked together for the interest and upbuilding of the National Association through many years. It was a very natural conclusion, then, that when Mr. Sanborn suggested to Mr. Morton a close business alliance, and backed up his suggestion with a very tempting offer, that the latter finally decided upon this new step. The Sanborn Electric Co. is an old and favorably known firm whose progress and development has marched hand in hand with the advancement of the electrical industry. The acquisition of Mr. Morton is in keeping with this progress.

WARREN F. CLARK, general manager of the Automatic Electric Heater Co., Warren, Pa., is making a trip to the Pacific Coast for the purpose of establishing a factory branch to handle the "Sepco" electric water heater business in western territory. The business of the company is developing rapidly, authority being given at a recent directors' meeting for the erection of another building adjoining the main factory, to be used for material storage and increased shipping facilities.

HERBERT METZ, for the past 2 yrs. in charge of farm electric light plant advertising with the Western Electric Co., has been appointed its power and light sales manager, with headquarters at the company's general offices at 195 Broadway, New York City. Mr. Metz joined the Western Electric Co. upon graduation from Penn State College in 1914, starting in the commercial student course at its big plant near Chicago. The following year he entered the advertising department in New York City, and, except for a year in field sales promotion work in the Rocky Mountain territory, he has since been connected with publicity work on the extensive farm electric equipment campaigns of the Western Electric Co.

A. U. HOWARD, for many years connected with the National Conduit & Cable Co., New York City, and recently with the Stamford (Conn.) Rolling Mill Co. as sales manager, has been appointed sales manager of the N. & G. Taylor Co., Inc., 300 Chestnut street, Philadelphia.

CHARLES R. VANNEMAN has been appointed chief engineer of the New York Public Service Commission. He will have charge of engineering and inspection work for the Commission of all electric light companies, steam railroads, street railroads, grade crossings, telephone and telegraph companies and gas companies throughout the state.

H. MCKNIGHT, who was recently appointed stores manager of the supply distributing house of the Western Electric Co. at Philadelphia, has been at the company's Philadelphia office since 1902 as service man, head of the service division, head of the claims division and assistant stores manager. In addition he found an opportunity to spend more than a year in the military service.

ADMIRAL ROBERT GRIFFIN, who has been head of the Bureau of Engineering of the Navy Department and engineer in chief of the Navy for over 8 yrs., terminated 40 yrs. of active service last month and retired to private life. It was largely through his influence that the electric drive was adopted for battleships. Under his direction high-powered radio stations were built at Panama, San Diego, Pearl Harbor, Cavite, Annapolis and Bordeaux, France. The latter was erected during the war and ranked as the world's most powerful station.

OBITUARY.

CHRISTIAN C. WUESTENFELD, who built the first electric light plant in Illinois in Elgin in the early eighties, died recently at his home in Elgin at the age of 81 yrs. He was one of the pioneers of the electrical industry in this country, and was an early associate of Thomas A. Edison. Mr. Wuestenfeld worked with Edison when the great inventor was just beginning to put electricity into practical use. He installed electric lights in Edison's home, trimmed the first electrically-lighted Christmas tree, installed an electric light plant in the Government Printing Office at Washington, D. C., and did other pioneer work. After building the Elgin electric light plant he served as manager of it for many years.

BUSINESS OPPORTUNITIES

News of Electrical Construction Projects in All Parts of the Country, Proposals Invited, Foreign Trade Openings and New Companies

EASTERN STATES.

Bar Harbor, Me.—The Bureau of Yards and Docks, Navy Department, Washington, D. C., is planning the erection of a local radio building for general wireless operating service.

Richmond, Me.—Considerable electrical equipment will be installed in the 2- and 3-story plant to be erected by the Damariscotta Leather Co. H. M. Castner is president and manager.

Boston, Mass.—The Edison Electric Illuminating Co. has been granted permission by the State Department of Public Utilities to issue stock for $5,857,000, the proceeds to be used for general financing, operations, improvements, etc. The security issue totals 45,050 shares of stock, selling for about $130 a share. Charles L. Edgar is president.

Boston, Mass.—Electric motors and other electrical equipment will be installed in the plant on Hyde Park avenue, to be erected by the Royal Curtain Manufacturing Co.

Lawrence, Mass.—Considerable electrical equipment will be installed in the 2-story plant addition to be erected by the David Brown Bobbin Co., Market and Foster streets, manufacturer of textile equipment, estimated to cost $42,000.

Adams Basin, N. Y.—Adams Basin Electric Light & Power Co. has been incorporated with a capital of $10,000, to operate a local light and power system for commercial service. The incorporators are J. J. Ginther, A. J. Harradine and G. H. Ward, all of Adams Basin.

Amsterdam, N. Y. — Adirondack Power & Light Corp. has made application to the Public Service Commission for permission to build an addition to its electric power plant at Princeton, Schenectady county.

Far Rockaway, L. I., N. Y.—Queensboro Gas & Electric Co., 347 Central avenue, has plans under way for remodeling its 2- and 3-story boiler plant, 94 by 95 ft., on Clinton street, into a service building, to include machine and electrical repair shop, storage facilities, etc. The improvement is estimated to cost $25,000.

New York, N. Y.—The Transit Department has arranged for the operation of a trackless trolley system on Staten Island.

New York, N. Y.—Fraser, Brace & Co., 32 Pearl street, have secured a contract for the erection of a new hydroelectric generating plant at Great Falls, on the Winnipeg river, Winnipeg, Man. The new plant will be operated by the Manitoba Power Co., Ltd. Work will be commenced at an early date and development of site placed under way at once.

Rochester, N. Y.—Electrical equipment will be installed in the 2-story plant addition, 80 by 112 ft., now being erected by the Stecher Lithographic Co., 274 North Goodman street, estimated to cost $50,000.

Jersey City, N. J.—Vulcan Iron Works, Hudson and Exeter streets, has completed plans for the rebuilding of the power plant at its works, recently destroyed by fire. The structure will be 1-story and is estimated to cost $40,000.

Newark, N. J.—Igoe Brothers, Poinier street, manufacturers of wire nails and kindred products, are taking bids for the erection of a 1-story power house at their plant.

Salem, N. J.—The Common Council will receive bids at once for the installation of new high and low-lift electrically operated pumping machinery at the municipal water works. W. B. Dunn is city recorder.

Trenton, N. J.—Following the installation of a new street-lighting system in the Sixth and Eleventh Wards, the City Commission is perfecting plans for the installation of improved street lamps in other parts of the city. With 57 new lamps installed in the districts noted, it is planned to place an additional quota of 57 in the same section at an early date.

Milford, Del.—The Light and Water Commission has arranged for the installation of a meter system at the municipal electric plant for the establishment of an equitable lighting rate. Records will be maintained over an extended period to determine the charges.

Allentown, Pa.—Pennsylvania Power & Light Co., will build a high-tension transmission line from Hazelton to Wilkes-Barre, to furnish the Wyoming valley district from its Harwood power plant. The company recently acquired the Wilkes-Barre Electric Light Co., and in the future will operate extensively in this section.

Brockwayville, Pa.—Snyder Township Light, Heat & Power Co. has been organized to operate an electric system throughout the township, with permission for formation and operation granted by the Public Service Commission.

Harrisburg, Pa.—The City Commission in planning the installation of an improved electric street-lighting system on North Second street, from Market Square to State street, using lamps varying from 400 to 600 cp. Commissioner S. F. Hassler is in charge.

Johnstown, Pa.—Penn Public Service Co. has filed notice with the Public Service Commission of its intention to issue bonds for $1,082,000. The proceeds will be used for general operations, extensions and improvements.

Philadelphia, Pa.—Logan Baking Co. is having plans prepared for the erection of a power plant in connection with a new 3-story baking plant.

Philadelphia, Pa.—Considerable electrical equipment will be installed in the fertilizer manufacturing plant to be erected by F. W. Tunnell & Co., 15 North Fifth street, estimated to cost $100,000.

Pittsburgh, Pa.—West Penn Power Co. has arranged a bond issue of $1,500,000 for its subsidiary organization, the Allegheny Pittsburgh Coal Co., and whose entire output is utilized by the parent organization at its generating plants. The proceeds will be used for general operations, extensions and improvements in properties for increased production.

Pittsburgh, Pa.—Preliminary plans are under way for a new electric light plant in the Bellevue District. Address city clerk.

Reading, Pa.—Metropolitan Edison Co. is arranging a bond issue of $216,500 and stock issue of $100,000, for general operations, extensions, etc.

Topton, Pa.—Merger plans are being perfected between the Lynn Township Electric Light & Power Co., the Kempton Electric Co. and the Krumsville Electric Co. The consolidated company plans extensive operations in this section with system lines tied in for unit production and distribution. D. S. Martin is secretary of the Lynn Township company.

Baltimore, Md.—John J. Hanson, superintendent of lamps and lighting, has filed a request with the Budget Committee for an appropriation of $1,146,712 for his department during the coming year, an increase of $23,723 over the amount allowed for the past 12 mo. The electric lighting and maintenance account for 1922 is estimated at $711,752.54, an advance of $25,776.94 over the 1921 figures. The increase is due to extensions in the lighting system in the Annex section of the city, and for proposed betterments.

Belair, Md.—In co-operation with the Consolidated Gas, Electric Light & Power Co., Baltimore, the Belair Electric Co. will construct a pole line, to total about 75 poles, in the vicinity of the municipality, for service increase and betterment. The Consolidated company will also make a number of line improvements in this section.

Cumberland, Md.—The City Commission is planning the early completion of a "white way" lighting system on Virginia avenue in the South End district.

Richmond, Va.—Roanoke River Development Co., 317 Mutual building, has received permission from the Federal Water Power Commission, Washington, D. C., for the construction of a hydroelectric generating plant on the Roanoke river, near Clarksville,

Va. A 50-ft. dam will be constructed to impound the water, with power plant to develop a capacity of about 60,000 hp.

Fayetteville, W. Va.—C. B. Hawley, 450 Munsey Building, Washington, D. C., and associates, have made application to the Federal Power Commission, Washington, D. C., for permission to construct and operate a hydroelectric generating plant in the Sandstone Falls district on the New river, near Fayetteville.

Hendersonville, N. C.—Blue Ridge Power Co. has been granted a franchise for the installation and operation of a local electric system.

Pilot Mountain, N. C.—The Common Council is planning a bond issue of $50,000 for the installation of a hydroelectric generating plant on the Ararat river. The proposed project will be carried out in co-operation with the Pilot Mountain Electric Co.

Wingate, N. C.—The Town Commission is arranging an appropriation of $10,000, the proceeds to be used for an electric lighting system. A. C. Small is town clerk.

Cedartown, Ga. — The Common Council is arranging a bond issue of $160,000 for municipal improvements, to include extensions and betterments in the electric lighting system. H. M. Hall, mayor, is in charge.

Fort Pierce, Fla.—The Common Council is completing plans for the erection of an addition to the municipal electric plant and will commence work at an early date. The extension is estimated to cost $55,000.

NORTH CENTRAL STATES.

Lima, O.—Buckeye Electric Light Co. has been incorporated with a capital of $10,000, by A. E. Henry, H. V. Swinehart, G. M. Kindell and others.

Battle Creek, Mich.—Extensive improvements are to be made at the Post Tavern. The specifications include an electric light plant. Address C. L. Post, owner.

Detroit, Mich.—Harper Hospital Association has awarded a contract to Everett Winters, 725 Detroit Savings Bank building, for the erection of a power house in connection with a new 2-story hospital to cost about $85,000. Albert Kahn, 1000 Marquette building, is architect.

Niles, Mich.—French Paper Co. has commenced the erection of a power house at its mill to cost about $70,000.

Otsego, Mich.—Mac Sim Bar Paper Co. has plans under way for the erection of a 1-story power plant at its paper mill, estimated to cost $300,000. Billingham & Cobb, Press building, Kalamazoo, Mich., are architects. A. B. Thomas is president and general manager.

Bedford, Ind.—The Bedford electric light and power plant, owned by the Interstate Public Service Co., was recently destroyed by fire with a loss of $70,000.

Belleville, Ill.—The purchase of new street lamps and the change of location of lamps as recommended by the Lighting Committee, has been adopted by the City Council. The city is agitating a municipally-owned light plant. Address City Attorney Perrin.

Bloomington, Ill.—Bids have been received for a turbine and condenser to be installed at the Bloomington water plant to operate the west side electric light plant which is expected to save the city $2000 a month.

Chicago, Ill.—According to plans announced Oct. 14 by the business men and property owners of Randolph street, between Wabash avenue and LaSalle street, this section of the city is to become the loop's "great white way." It is stated that the thoroughfare will be given 10 times as much illumination as at present when the scheme approved by the Chicago Plan Commission is put into operation. Address C. A. Greiner, % Commonwealth Edison Co., 72 West Adams street, Chicago.

Ottawa, Ill.—Better lighting is being considered by the city council. Address Commissioner Charles J. Sticklen.

Springfield, Ill.—Work has been begun on the installation of additional electric lamps on South Walnut street between Williams boulevard and South Girard avenue.

Milwaukee (Shorewood), Wis.—An election was held Oct. 18 to vote on the question of issuing $75,000 worth of public improvement bonds, $20,000 of which was to be used for the improvement of street lighting. Address city clerk.

Prior Lake, Minn.—Electric light bonds to the amount of $5000 have been voted. Address the mayor.

Hopkinton, Ia.—An electric light plant is being erected here at a cost of $25,000. Address the mayor.

Oskaloosa, Ia. — A hydroelectric plant is being planned on the Des Moines river, south of this city. A survey has been made for the construction of a dam to develop and control up to 4000 hp. for electric transmission and operation of a waterworks plant to be municipally owned and operated.

Ava, Mo.—Ava Electric Co. is planning the discontinuance of operations owing to present rates and inability to operate the plant profitably under such schedule.

Brookfield, Mo.—The council has accepted the proposition presented by the Brookfield Light Co. for the furnishing of power for the new waterworks. Address the mayor.

Fulton, Mo.—The purchase of a new boiler instead of a new steam condenser is being considered by the Water and Light Committee. A new electrical unit for the electric light plant will also be installed. Address Frank T. Baker, chairman.

La Grange, Mo.—Bonds amounting to $25,000 have been voted for the extension of electric and waterworks. Address the mayor.

Salisbury, Mo.—The Common Council has awarded a contract to the General Electric Co., St. Louis, for equipment for its proposed new municipal electric lighting plant. Plans are being considered for the construction of a power line to Prairie Hill.

St. Louis, Mo.—Considerable electrical equipment and machinery will be installed at the ice-manufacturing plant to be erected by the Polar Wave Ice & Fuel Co., Grand and Olive streets, on Gravois street, estimated to cost $500,000.

St. Louis, Mo.—United Railway Co., 39th and Park streets, is completing plans for the erection of a building for general service on Taylor street, estimated to cost $100,000.

Laurel, Neb.—Bids were received Oct. 18 for the purchase of $23,000 worth of 6% light and power bonds. Address George A. Wright, village clerk.

SOUTH CENTRAL STATES.

Cornishville, Ky. — Cornishville Lighting Co. has been organized under state laws to install and operate a local system. The company is headed by Bishop Wash and S. H. Gardner.

Rogersville, Tenn. — Rogersville Electric Co. will make extensions and improvements in its plant.

Cloverdale, Ala.—A telephone system and extension of the line to Florence will be installed by the Cloverdale Community club. Address D. H. Reneger, chairman of committee.

Piggott, Ark.—The Common Council is planning extensions and improvements in its municipal electric lighting system.

Ardmore, Okla.—Duncan, Ardmore & Lawton Interurban Railway Co. recently organized, is planning the construction of a new interurban railway system from Ardmore to Lawton, by way of Duncan, a distance of about 115 mi.

Billings, Okla.—Contract has been let to furnish the city with electric power from a high line to be built into Billings from a point on the main line running out of the Oklahoma Gas & Electric Co.'s plant at Oklahoma City. This is a part of the plan to furnish several cities and towns in northwestern Oklahoma with electric service from high lines.

Buffalo, Okla.—Buffalo Light & Power Co., recently organized, is planning the immediate erection of an electric power plant for local commercial service. E. H. George is general manager.

Crescent, Okla.—The city has voted $30,000 bonds to construct a high line from Guthrie connecting with the power plant of the Public Service Co. of Oklahoma at that point into Crescent. The town also voted $30,000 to improve its waterworks system.

El Reno, Okla.—The Common Council has preliminary plans under way for the construction of a municipal lighting system.

Fairland, Okla.—The Town Committee has plans under way for the erection of a municipal electric power plant. H. T. Olmstead & Co., Oklahoma City, Okla., are engineers.

Hugo, Okla.—Hugo Power Co. has been incorporated with a capital of $50,000, to install and operate a local light and power system. R. D. Wilbur and W. T. Larimore head the company.

Kingston, Okla.—An electric high line has been built into this city by the Consumers Light & Power Co. and 24-hr. service is now assured.

Many homes are being wired for electricity.

Lahoma, Okla. —The Town Board has awarded a contract to the Lahoma Motor Co. for the installation of a new electric street-lighting system.

Manchester, Okla.—The Common Council is having plans prepared for the construction of a transmission line to Anthony, Kan., for local power supply. Bonds for the work will be voted. W. B. Rollins & Co., Railway Exchange building, Kansas City, Mo., are engineers.

Muskogee, Okla. — Considerable electrical equipment will be installed by the Oklahoma Producing & Refining Co., Tulsa ,Okla., in connection with the erection of additions to its oil refinery at Muskogee, estimated to cost $150,000.

Pawhuska, Okla.—Bonds have been voted for $133,000 for extensions and improvements in the municipal power plant. Plans are being made under the direction of the Common Council.

Pawnee, Okla.—The Common Council is planning extensions and improvements in the municipal lighting system to cost about $62,000. Bonds for this amount will be voted.

Ponca City, Okla.—The city is planning three additional blocks of "white way" which will give it 14 blocks in all of "white way" streets.

Corpus Christi, Tex.—Gulf Coast Power Co. has been incorporated by R. W. Morrison, Marshall Hicks and C. M. Dickson, all of San Antonio, Tex.

El Paso, Tex.—El Paso Electric Co. has disposed of a note issue of $750,000, the proceeds to be used for general operations, extensions and improvements in plant and system.

Groesbeck, Tex.—Considerable electrical equipment will be installed by the Magnolia Petroleum Co., Dallas, Tex., at its proposed new pumping plant and oil works at Groesbeck, estimated to cost $500,000.

Waco, Tex.—A committee appeared before the City Commission asking that the Commission take under consideration the construction of additional "white ways" for the city. The total cost would be about $9000. Address the mayor.

WESTERN STATES.

Olympia, Wash.—Farmer's Co-operative Light & Power Co. has been incorporated with a capital stock of $10,000, by A. G. West, W. R. Taylor, R. Gerth, G. E. Conn and Elmer Walker.

Astoria, Ore.—Considerable electrical equipment will be installed in the box manufacturing plant to be erected by the Astoria Box Co., to replace its factory recently destroyed by fire with loss of about $150,000.

Cottage Grove, Ore.—The Common Council is arranging plans for the installation of a municipal electric lighting system, estimated to cost $50,000. Bonds to this amount have been voted.

Corning, Cal.—W. H. Samson has applied to the Federal Power Commission for a preliminary permit to construct dam and reservoir in Stuarts fork of the Trinity river, 8-mi. conduit and power house, a second diversion-dam conduit and power house. The proposed use is for public utility purposes.

San Diego, Cal.—Ed. Fletcher, 920 Eighth street, has applied to the Federal Power Commission for a preliminary permit to construct a dam 200 ft. high in Santa Ysabel creek; diversion dam in Black Canyon creek; 5.6 mi. of pipe line to a power house, in San Diego county, Cal., for public utility purposes.

San Francisco, Cal.—R. T. Harding, 105 Montgomery street, has applied to the Federal Power Commission for a preliminary permit to divert Bucks creek and Grizzly creek, tributaries of the north fork of Feather river, to a common forebay and power house in Plumas county, Cal., for mining and manufacturing purposes.

PROPOSALS.

Washington, D. C.—Sealed proposals will be opened in the office of the Treasury Department, supervising architect's department, Oct. 31, for the construction (except mechanical equipment) of an infirmary group (three buildings) and for extensions to the heating, power and refrigerating plants, for the U. S. Public Health Service Hospital at Fort Bayard, N. M. Drawings and specifications may be obtained from the superintendent of construction at Fort Bayard, N. M., or at the office of James A. Wetmore, acting supervising architect, Washington, D. C.

Washington, D. C.—Sealed proposals will be opened in the office of the Treasury Department, supervising architect's department, Oct. 26, for furnishing and installing lighting fixtures in the U. S. Public Health Service Sanatorium at Dawson Springs, Ky., in accordance with drawings and specifications, copies of which may be had at the office of James A. Wetmore, acting supervising architect, Washington, D. C.

Stevens Point, Wis.—Bids will be received Oct. 28 for the furnishing of materials and the construction of an ornamental lighting system in accordance with plans on file at the office of the city clerk, Board of Public Works.

Sayre, Okla.—Bids will be received Oct. 25 for the extending of electric light and power plant; installing 150 hp. oil engine direct connected to a 125-kv-a. 2300-volt, 3-phase, 60-cycle generator, etc. Address W. E. Simmonds, city clerk.

Sterling, Ill.—Sealed bids will be received Oct. 24 for the construction of an ornamental curb-lighting system on certain streets and avenues of this city. The estimate of the items by quantity constituting the said improvement are as follows: 79 ornamental diffusing globe and glass canopy tops installed on posts; 79 cast iron ornamental standards "Sterling" design; 79 safety insulating transformers complete with detachable couplings on primary side for operating 400 or 600-cp. mazda C lamps; 20,500 ft. No. 8 rubber insulating 5000-volt, lead covered double steel taped single conductor cable installed in trench; 1100 ft. No. 8 rubber insulated, braid covered, 600-volt two conductor cable; 10,000 ft. trenching for cable; 7500 ft. trenching in brick, pavement or sidewalk; 2500 ft. trenching in soil, street or parkway; 79 24 by 24 by 30-in. concrete bases with bolts; 79 post settings, wiring posts, installing transformers and painting miscellaneous items, tape, solder, paste, grounds, etc. Freight, cartage, tools, etc. The bidders shall bid separately upon each of the items specified above. Address Mayor James P. Overholster, Sterling, Ill.

INCORPORATIONS.

New York, N. Y.—All-American Electrical Maintenance Corp. Capital, $10,000. To operate an electrical repair works. Incorporators: A. Behr, E. McAmbridge and E. Adelman. The company is represented by McKenna, Broderick & Robinson, Tribune building.

Utica, N. Y.—Collite Corp. Capital, $10,000. To manufacture electric lighting fixtures and kindred equipment. Incorporators: G. R. and D. A. Hughes and J. Rothstein. The company is represented by Dunmore, Ferris & Dewey, Utica.

Schenectady, N. Y.—Electrical Inventions & Development Co. Capital, $25,000. To manufacture electrical products. Incorporators: N. Alberto, F. Messina and M. T. Bender, Albany, N. Y.

Huntington, W. Va.—Central Electric Co. Capital, $15,000. To manufacture electrical supplies. Incorporators: Thompson B. Pierce and F. L. Hussey, Ashland, Ky.; and R. T. Mosby, Christianburg, Va.

Chicago, Ill.—Electric Units Corp., 816 First National Bank building. Capital, 1000 shares of stock, no par value. To manufacture electrical appliances. Incorporators: Samuel Labow, F. J. Maas and Robert H. Stall.

FOREIGN TRADE.

[Addresses of firms referred to in these trade opportunities may be obtained by writing to the Bureau of Foreign and Domestic Commerce, Washington, D. C., or its branch and local co-operative offices. Request for each opportunity should be on a separate sheet and the file number given.]

Lighting Appliances (111)—A gas manufacturing company in a city of Chile desires to purchase gas mantles, burners, heaters, tubes, lamp shades, globes, and all articles which are used by consumers of artificial gas. Quotations should be given c. i. f. Talcahuano. Correspondence should be in Spanish. Reference.

Power-Plant Equipment, etc. (107)—A representative of a Russian firm formerly doing business in Southern Russia reports that he anticipates he will soon have an opportunity to reestablish his business in view of the changed attitude of the bolshevik regime. He invites correspondence with manufacturers in the United States producing steam boilers, pipe fittings, water softeners, fuel economizers and miscellaneous power-plant equipment. No reference given.

FINANCIAL NEWS

Comment on the Financial Outlook in the Electrical Industry, New Securities, Reports of Earnings, Dividends and Utility Stocks

Earnings of Republic Railway & Light Co. Show Increase.

Revival of industry is manifest in the August earnings statement of the Republic Railway & Light Co. Gross revenue of $560,847 compares with $547,873 for July and $737,310 for August, 1920. Operating expenses and taxes of $394,625 were $210,396 less than those of the same month of last year and $32,098 less than in July, 1921, while net earnings amounted to $166,211, against $132,288 in August of last year and $121,149 in July of this year. After providing for all interest charges, discount on bonds and subsidiary company dividends there remained a surplus of $33,307, compared with a deficit of $2,459 for the previous month and a surplus of $47,402 for August, 1920.

According to an official, reduction in operating expenses was due to large decreases in wages, coal and other materials. He says that although business is usually bad in August, the balance available for dividends for this month amounted to over 7.5% on the $5,191,400 outstanding preferred stock. Power consumption during the week just passed was greater than any week so far this year. The earnings for August and 12 mo. ended Aug. 31, 1921, with comparisons with similar periods of 1920 follow:

	1921.	1920.
August gross	$ 560,847	$ 737,310
Net after taxes	166,221	132,288
Total income	193,755	169,599
Surplus after fixed charges	33,307	47,402
12 mo. gross	7,916,312	7,695,379
Net after taxes	1,845,686	1,874,316
Total income	2,108,587	2,003,293
Surplus after fixed charges	256,135	575,164

West Penn Power Co.

The West Penn Power Co., for the 6 mo. ended June 30, 1921, reports net earnings after charges and taxes, of $812,128. The consolidated income account for the 6 mo. ended June 30, 1921, shows as follows:

Gross earnings	$4,719,666
Operating expenses	3,026,592
State and Federal taxes	175,116
Fixed charges	705,830
Net earnings	812,128
Preferred dividends	104,538
Common dividends	400,000
Surplus	307,590
Profit and loss surplus	1,225,653

Detroit Edison Co.

For the 12 mo. ended Aug. 31, 1921, the Detroit Edison Co. shows net income after charges and taxes of $2,683,977. The consolidated income account for the 12 mo. ended Aug. 31, 1921, follows:

Gross earnings	$23,345,497
Expenses, depreciation and taxes	17,479,010
Interest	3,182,510
Net income	2,683,977
Dividend	2,221,194
Extraordinary charges	819,180
Deficit	356,397
Previous surplus	2,458,617
Profit and loss surplus	2,102,220

Puget Sound Power & Light Co.

	1921.	1920.
August gross	$ 758,039	$ 764,234
Net earnings	286,922	292,735
Surplus after charges	140,666	134,662
12 mo. gross	10,201,218	9,631,199
Net earnings	4,245,239	3,975,471
Surplus after charges	2,399,051	2,130,334

Blackstone Valley Gas & Electric Co.

	1921.	1920.
August gross	$ 300,332	$ 256,753
Net earnings	103,578	44,814
Surplus after charges	75,735	19,552
12 mo. gross	3,448,601	3,107,559
Net earnings	1,023,904	905,842
Surplus after charges	691,774	605,884

Southwestern Power & Light Co. Subsidiaries.

	1921.	1920.
August gross	$ 776,480	$ 755,362
Net earnings	323,736	203,777
12 mo. gross	10,202,358	7,990,266
Net earnings	3,969,559	3,080,296

American Power & Light Co. Subsidiaries.

	1921.	1920.
August gross	$1,904,282	$1,724,064
Net earnings	692,071	476,199
12 mo. gross	24,656,776	19,381,819
Net earnings	8,416,659	7,024,936

Tennessee Railway, Light & Power Co. and Subsidiaries.

	1921.	1920.
August gross	$ 523,511	$ 503,835
Net after taxes	155,698	122,846
12 mo. gross	6,563,376	6,174,274
Net after taxes	2,070,207	2,139,549

California Railway & Power Co.

For the year ended June 30, 1921, the California Railway & Power Co. reports net loss after expenses, taxes, etc., of $13,192, as compared with $23,838 in the previous year. The income account for the year compares as follows:

	1921.	1920.
Total income	$ 1,167	$ 3,457
Expenses, taxes, etc	14,359	27,295
Net loss	$13,192	$23,838
Profit and loss surplus	$26,332	*$57,864

*Deficit.

Havana Electric Railway, Light & Power Co.

	1921.	1920.
August gross	$1,045,458	$ 793,107
Net earnings	472,259	351,239
Total income	474,820	357,003
Surplus after fixed charges	165,582	122,076
8 mo. gross	8,454,897	7,350,392
Net earnings	3,724,160	3,614,590
Total income	3,790,137	3,686,770

Northern Ohio Electric Co. and Subsidiaries.

	1921.	1920.
August gross	$ 684,610	$ 935,193
Net after taxes	182,613	177,757
Surplus after fixed charges	39,440	38,095
Balance after preferred dividends	9,440	8,095
8 mo. gross	5,800,547	7,497,432
Net after taxes	1,341,133	1,858,335
Surplus after fixed charges	156,448	785,372
Deficit after preferred dividends	83,551	*545,372

*Surplus.

Appalachian Power Co.

	1921.	1920.
August gross	$ 205,263	$ 200,696
Net after taxes	84,139	114,341
Total income	85,305	114,341
Surplus after charges	2,534	45,099
Balance after preferred dividends	609	45,099
12 mo. gross	2,497,351	1,975,626
Net after taxes	1,054,032	891,284
Total income	1,064,531	891,284
Surplus after charges	72,658	7,518
Balance after preferred dividends	48,578	*2,405

*Deficit.

Northern Texas Electric Co.

	1921.	1920.
August gross	$ 279,135	$ 336,192
Net earnings	99,232	128,059
Surplus after charges	73,902	103,124
12 mo. gross	3,786,468	3,835,532
Net earnings	1,296,495	1,480,341
Surplus after charges	992,693	1,182,198

Galveston-Houston Electric Co.

	1921.	1920.
August gross	$ 316,201	$ 339,860
Net earnings	83,093	114,116
Surplus after charges	47,708	78,782
12 mo. gross	3,892,895	3,487,675
Net earnings	1,077,914	944,956
Surplus after charges	653,567	523,145

WEEKLY COMPARISON OF CLOSING-BID PRICES OF SECURITIES OF LEADING ELECTRICAL COMPANIES.

Quotations furnished by F. M. Zeller & Co., Rookery Bldg., Chicago.

	Div. rate. Per cent.	Bid Oct. 10.	Bid Oct. 17.
Public Utilities—			
Adirondack Electric Power of Glenns Falls, common	6	12	12
Adirondack Electric Power of Glenns Falls, preferred	6	78	79
American Gas & Electric of New York, common	..	102	101
American Gas & Electric of New York, preferred	6	40	41
American Light & Traction of New York, common	..	89	89
American Light & Traction of New York, preferred	6	79	79
American Power & Light of New York, common	4	62	62
American Power & Light of New York, preferred	6	72	73
American Public Utilities of Grand Rapids, common	..	8	9
American Public Utilities of Grand Rapids, preferred	..	17	17
American Telephone & Telegraph of New York	9	108	108
American Water Works & Elec. of New York, common	..	4	4
American Water Works & Elec. of New York, particip	7	12	11½
American Water Works & Elec. of New York, 1st preferred	..	52	52
Appalachian Power, common	..	4	4½
Appalachian Power, preferred	7	38	39
Cities Service of New York, common	+extra	144	183
Cities Service of New York, preferred	6	54	55
Commonwealth Edison of Chicago	8	109½	110
Comm. Power, Railway & Light of Jackson, common	..	8	8
Comm. Power, Railway & Light of Jackson, preferred	6	26	26
Federal Light & Traction of New York, common	..	8	8½
Federal Light & Traction of New York, preferred	..	56	56½
Northern States Power of Chicago, common	..	46	46
Northern States Power of Chicago, preferred	ex.div.7	79	79
Pacific Gas & Electric of San Francisco, common	..	58	60
Public Service of Northern Illinois, Chicago, common	7	79	81
Public Service of Northern Illinois, Chicago, preferred	6	80	82
Standard Gas & Electric of Chicago, common	..	8	8
Standard Gas & Electric of Chicago, preferred	8	33½	33¼
Tennessee Railway, Light & Power of Chattanooga, common	..	¾	¾
Tennessee Railway, Light & Power of Chattanooga, preferred	6	5	5
Western Power of San Francisco, common	..	29	29½
Western Union Telegraph of New York	..	84¼	83½
Industrials—			
General Electric of Schenectady	8	125	124½
Westinghouse Electric & Mfg. of Pittsburgh, common	7	44½	45